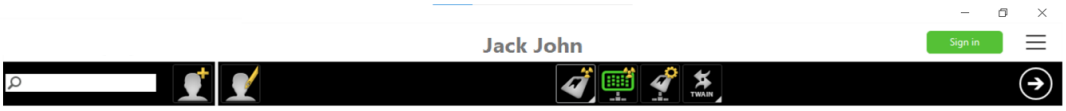
		**Cephalometric Tracing** icon: Click to launch the automatic cephalometric tracing tool. **Note**: This tool is available only if you have the Tracings Module software installed.

Drawing and Annotations toolbar: Contains icons for functions that you can apply to a selected image.

		**Select** icon**:** Use this tool to select a drawing or measurement that you want to modify. The first mouse click selects the object, and the second mouse click shows the control points.
 **Drawing** icon group		**Straight line** icon**:** Click to draw a straight line on an image.
		**Multi-segment line** icon: Click to draw a multi-segment line on an image.
		**Freehand line** icon: Click to draw a freehand line on an image.
		**Spline drawing** icon: Click to draw a spline curve that is basically a freehand line that has editable points.
		**Circle** icon: Click to draw a circle on an image.
		**Ellipse** icon: Click to draw an ellipse on an image.
		**Filled ellipse** icon: Click to draw a filled ellipse on an image.
		**Rectangle** icon: Click to draw a rectangle on an image.
		**Filled rectangle** icon: Click to draw a filled rectangle on an image.
		**Landmark point** icon: Click to add a point on an image.
		**Arrow line** icon: Click to draw an arrow on an image.

 **Measurements** icon group		**Straight line measurement** icon: Click to draw a straight line measurement on an image.
		**Multi-segment line measurement** icon: Click to draw a multi-segment line measurement on an image.
		**Angle measurement** icon: Click to draw an angle measurement on an image.
		**Orthogonal measurement** icon: Click to draw an orthogonal line measurement on an image.
		**Text** icon: Click to add a text object to an image.
 **Implant** icon group		**Mandibular canal** icon: Click to draw a mandibular canal on an image.
		**Implants** icon: Click to add an implant to an image.
		**Calibration** icon: Click to calibrate an image.
		**Undo** icon: Click to undo an action.
		**Redo** icon: Click to counteract the Undo function.
		**Delete** icon: Click to delete selected drawings, annotations, or measurements.
		**Color and Thickness** icon: Click to change object color and line thickness.

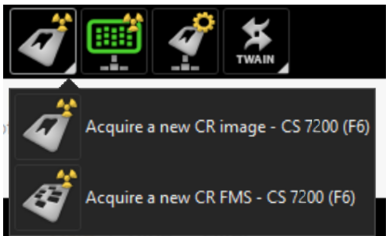
CS Imaging Software Main Toolbar



Scanner Status Indicator: Shows the status of the active scanner. The following status options are available:

- Green: Ready to scan.
- Yellow: Blinks when tagging a plate and when a new image is transfered to CS Imaging Software.
- Red: Error in the active scanner.
- Grey: Active scanner is not connected.

CS 7200-Configure: Click to open the CS 7200 configuration window. See “Imaging Plate System Configuration Window” on page 58.

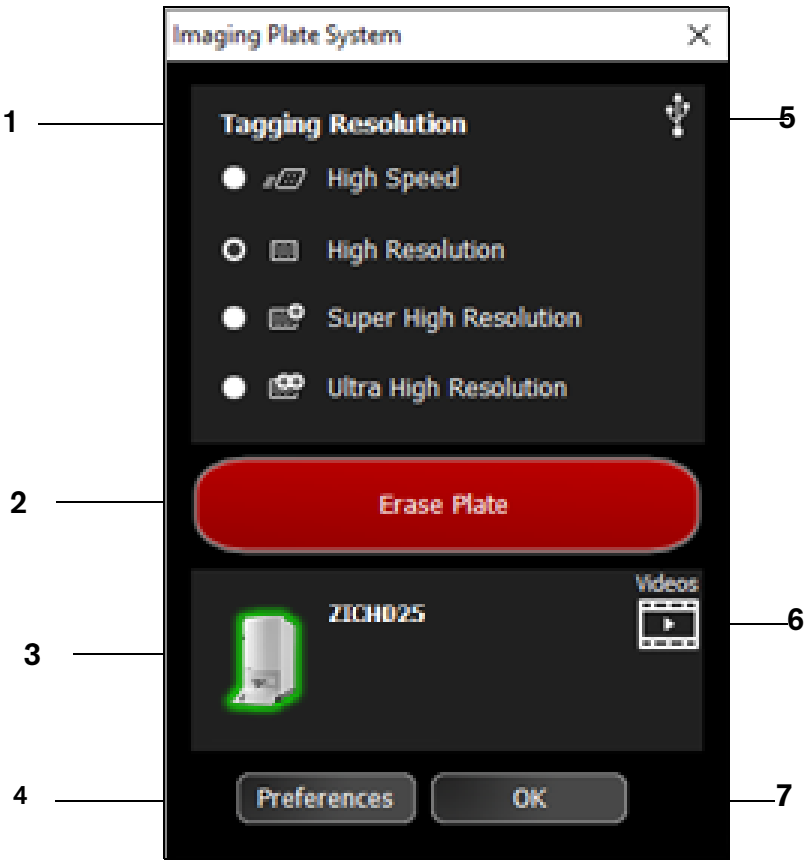


New CR image: Click the arrow button to select between the two options:

- CS7200 acquisition (CR)
- CS7200 FMS acquisition (CR2). After the option is selected, click to open the CS 7200 image Acquisition software in the FMS mode. See “Full Mouth Series (FMS) Image Acquisition Overview” on page 51.

Imaging Plate System Configuration Window

The **Imaging Plate System** configuration window is opened when you click the **CS 7200 - Configure** button on the **CS Imaging Software** main toolbar.



1 **Tagging Resolution:** Select one of the four available resolutions for the next tagging resolution. Available only if Scan & Go is connected.

2 **Erase Plate:** Click to erase the plate which is inserted. See “Manually Erasing the Plate” on page 81.

3 **Scanner Status Indicator:** Displays the status of the active scanner.
- Green highlight: Scanner is ready for operation.
- Grey: Active scanner is not connected.
- Red: Active scanner error.

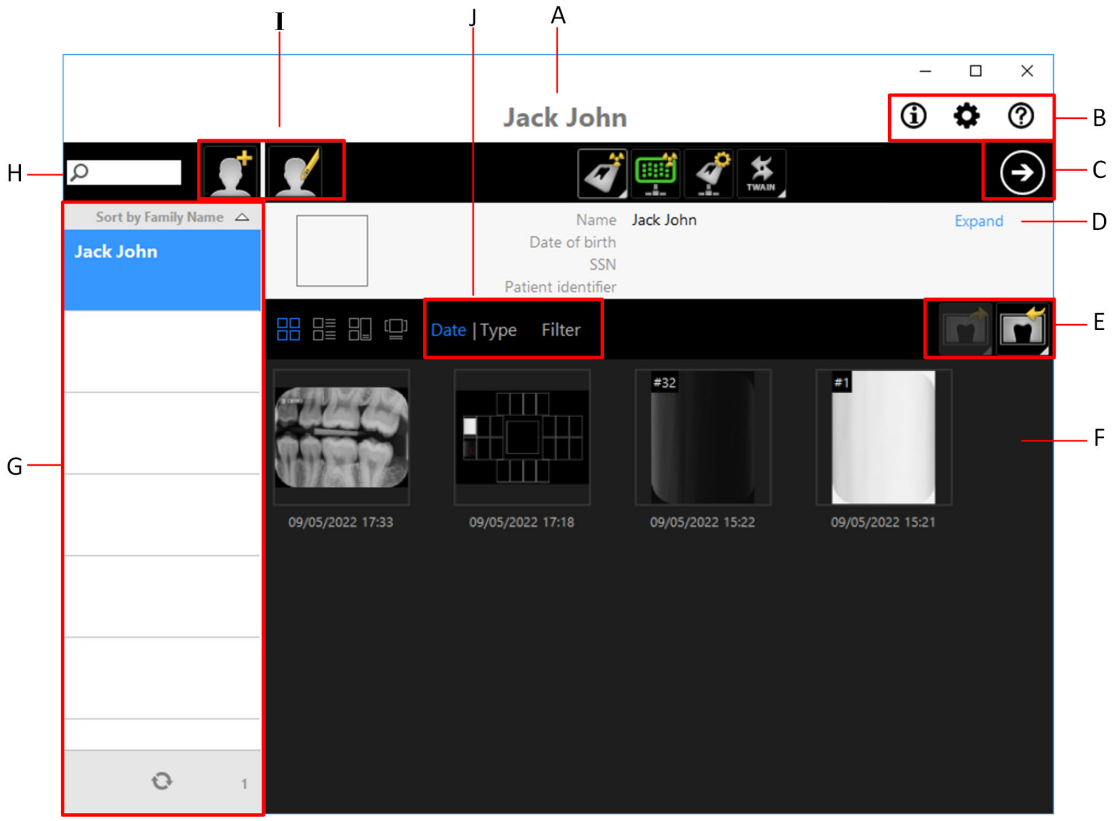
4 **Preferences:** Click to open the CS 7200 Preferences window.

5 **Scan & Go Status Indicator:** Displays the status of the Scan & Go device.
- White: Scan & Go device is connected.
- Grey: Scan & Go device is not connected.

6 **Videos:** Click to open the training videos.

7 **OK:** Click to save the selected settings and close the **Imaging Plate System** configuration window.

Patient Browser Window Overview



A	**Title bar:** Name of the selected patient.
B	**System icons:** About, Preferences, and Online Help.
C	**Imaging Software Button:** Click to open the Imaging window.
D	**Patient Card**: Information on the selected patient.
E	**Image Management Tools**: Import/export and print functions.
F	**Patient History**: Displays the list of available patients.
G	**Patient List**: Displays the list of available patients.
H	**Patient Search**: Enables searching in the patient list.
I	**Patient Management Tools**: Contain create/modify patient functions.
J	**Patient History Tools**: Contain patient history functions.

5 CS 7200 Image Acquisition Interface

CS Imaging Software Overview

The CS Imaging Software is a user-friendly working interface that was designed and developed specifically for radiological diagnosis. It is the common imaging platform for all our digital systems for dentistry.

The CS Imaging Software provides management of the patients and image database.

To open your CS Imaging Software: On your desktop, double-click the CS Imaging Software icon or click **Start > All Programs > Carestream> CS Imaging Software.**

For more information, see your CS Imaging Software documentation.

CS 7200 Image Acquisition Interface Overview

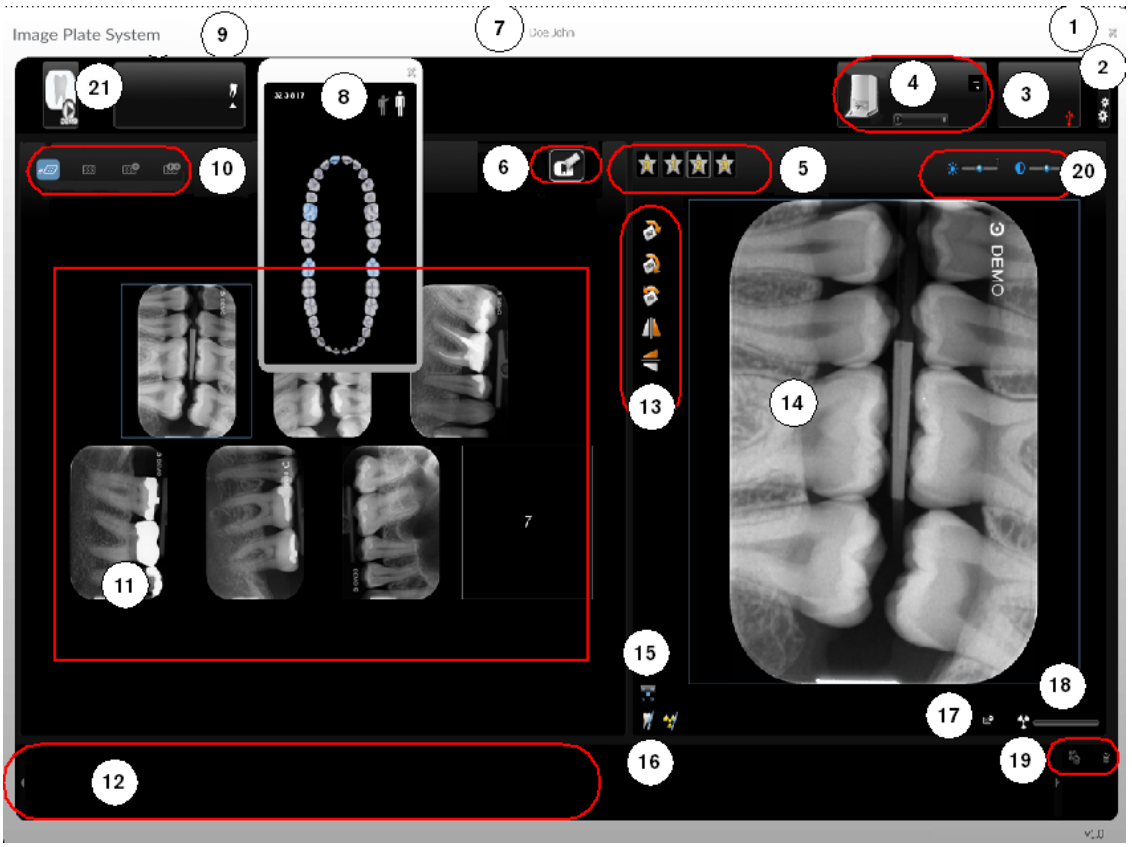
The CS 7200 image Acquisition interface is a user-friendly application designed and developed specifically for the CS 7200 intraoral imaging system. It provides a rich array of image processing options in addition to the acquisition functions.

The image Acquisition interface provides one mode:

Full Mouth Series: Full series of frames, according to one of the available industry standard templates for full mouth series, selected in the **General Settings** tab.

Full Mouth Series Image Acquisition Interface

Figure 12 Image Acquisition Interface - Full Mouth Series



Scanner List

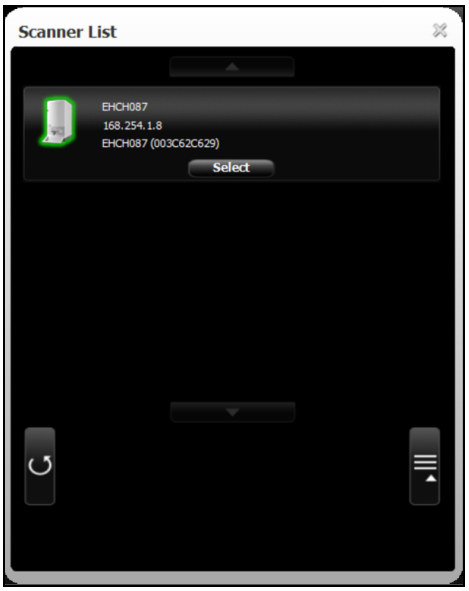


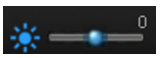
Table 4 Image Acquisition Interface Key

1	**Exit**	Click  to exit the CS 7200 image Acquisition interface.
2	**Settings**	Click  **Settings** to customize the default settings. See "Working with Settings" on page 94."
3	**Scan & Go Status**	The Scan & Go's active connection status (white color indicates connection, red indicates no connection).  USB (connected)  USB (not connected)
4	**Scanner Area**	Allows browsing of all active connected scanners (if there are multiple scanners in the same network). Click  **Scanner List** to list all scanners.  Green frame indicates a connected scanner.  Grey frame indicates a disconnected scanner.  Red frame indicates a scanner in error state. (Click the scanner icon to display the error tool tip.) Click  the arrow, to display the images in the memory of the selected scanner. To retrieve the required image, pull the image to the Images Display Area.
5	**Favorite Filters Buttons**	Click to enhance a different zone of interest:  Click to enhance the display of periodontal tissue.  Click to enhance contrast at the canals and roots (produce brighter images).  Click to optimize contrast at crowns, amelo-dentinal junctions, and roots.  Click to enhance contrast at the canals and roots.
6	**Erase Button**	Click  to erase the plate.
7	**Patient Information**	Displays the patient information.

Table 4 Image Acquisition Interface Key (Continued)

		FMS or **Image Acquisition** template.
8	**Tooth Selection**	When using an FMS template, the tooth associated with the selected frame is highlighted blue in the panoramic arch icon. When using Image Acquisition, clicking the arrow (under the Toothpicker icon) allows selecting individual teeth in either child  or adult  dentitions. (To clear the selection, click the tooth again.)
9	**Imaging Software Details**	Clicking the  icon provides the imaging software details.
10	**Scan Resolution**	The scan resolution to apply when tagging information on an imaging plate with the Scan & Go device. To change the scan resolution for the current exam acquisition, click the required icon before you tag the imaging plate:  High Speed (HS)  High Resolution (HR)  Super High Resolution (SHR)  Ultra High Resolution (UHR) **Note**: Available only when the CS 7200 scanner is selected.
11	**Images Display Area**	This area displays the images according to one of the dental standard layouts determined by the **Default template selection** in the **General Settings** tab. See "General Settings Tab" on page 96.
12	**Images Gallery**	Useful for storing images when rearranging the layout or for discarding an image when necessary.
13	**Orientation Buttons**	 Click to rotate the selected image 90 degrees clockwise.  Click to rotate the selected image 180 degrees.  Click to rotate the selected image 90 degrees counter clockwise.  Click to flip the selected image vertically (mirror inversed images).  Click to flip the selected image horizontally (mirror inversed images).
14	**Preview Panel**	Displays the active frame's image (if frame is populated). You may apply the processing and comments to the preview image.

Table 4 Image Acquisition Interface Key (Continued)

15	**Full Screen**	 Click to display the image in a separate, full screen window (dark room mode).
16	**Comments & Exposure Values**	 Click to add a comment to the image. (The comments will be added to the DICOM tags of the image and can be viewed later using the Imaging Software or DICOM viewer.)  Click to enter custom X-ray exposure values. This information is inserted in the image's DICOM header. Otherwise, the default exposure values as defined in the **General Settings** tab are inserted in the DICOM header. See "General Settings Tab" on page 96.
17	**Selected Image Resolution**	Indicates the selected image's resolution level (in the preview image panel):  High Speed (HS)  High Resolution (HR)  Super High Resolution (SHR)  Ultra High Resolution (UHR)
18	**X-ray Exposure Indication**	 Partly red, indicates an underexposed image. Review the X-ray technique and consider increasing the exposure values for better image quality and diagnosis.  Green, indicates good exposure values.  All red, indicates that the image is overexposed. Review the X-ray technique and consider lower exposure values for better image quality and diagnostics.
19	**Delete**	 Click to delete ALL images from the Images Gallery.  Click to delete the selected image from the Images Gallery.
20	**Image Brightness and Contrast**	 Use the brightness slider to manually adjust the image's brightness.  Use the contrast slider to manually adjust the image's contrast.  Click to apply an automatic optimization of brightness and contrast.

Tip: Image Brightness and Contrast may also be adjusted by holding the mouse button over the image and dragging vertically, for contrast, and horizontally, for brightness.

21	**Demo Mode**	 Populates one frame in the Images Display Area with a demo image each time the icon is selected.

Table 4 Image Acquisition Interface Key (Continued)

22	**Refresh**	 Click to refresh the Scanner List.
23	**Close Scanner List**	 Click to close the Scanner List.

6 Acquiring Images Without Scan & Go

Note: It is recommended that you use the USB connection when acquiring images without Scan & Go.

Image Acquisition Workflow

This chapter describes the acquisition procedure for acquiring dental images.

A typical workflow consists of the following steps:

1 Selecting or creating a patient record and accessing the Imaging window. See “Starting the Imaging Software” on page 68.

2 Inserting the imaging plate into a hygienic sheath and sealing it. See “Preparing the Imaging Plates” on page 69.

3 Positioning, exposing, and removing the imaging plate from the patient’s mouth. See “Performing the X-rays” on page 70.

4 Disinfecting the hygienic sheath. See “Disinfecting the Hygienic Sheath and the Imaging Plates” on page 104.

5 Scanning the imaging plate and reviewing the image. See “Scanning the Imaging Plate” on page 73.

Acquiring a Single Image

Starting the Imaging Software

To start the Imaging Software, follow these steps:

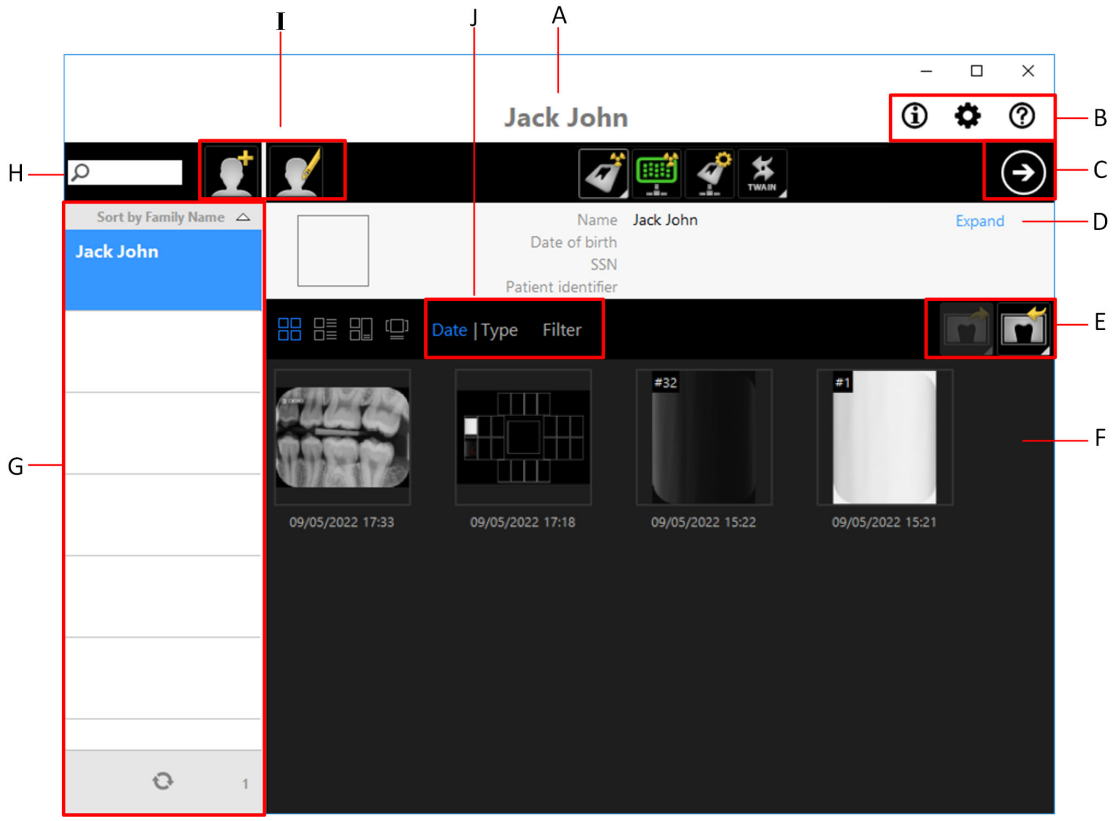
1 Open your Imaging Software.

2 On your desktop, double-click the CS Imaging Software icon  , or click **Start > All Programs >** (the name of your**) Dental Imaging Software.**

The Patient Browser window is displayed.

3 Create or open an existing patient record:

- **To open an existing patient record**: In the Patient Browser search field (H), start typing to search for a patient card.



- **To create a new patient record**: Click the **Create New Patient Card** button alongside the search field to create a new patient card.

The CS 7200 indication LED turns from yellow to green, indicating that the scanner is ready for use, and the **Imaging** window is displayed.

4 Once you have selected or created a patient, in the Patient Browser Toolbar (C), click the arrow button to open the Imaging application. The Patient Browser window remains open, and the Imaging window is displayed.

5 Wait for the Scanner Status icon to turn green on the **Imaging** window toolbar, indicating that the CS 7200 scanner is connected to the workstation and is ready for acquisition.

Preparing the Imaging Plates

To prepare the intraoral imaging plate, follow these steps:

1 Select an imaging plate of the appropriate size for your examination.

Important: Use only CS 7200 intraoral imaging plates from Carestream Dental and hygienic sheaths from Carestream Dental. The use of plates or hygienic sheaths from a third-party supplier may cause a malfunction of the system and void the warranty.

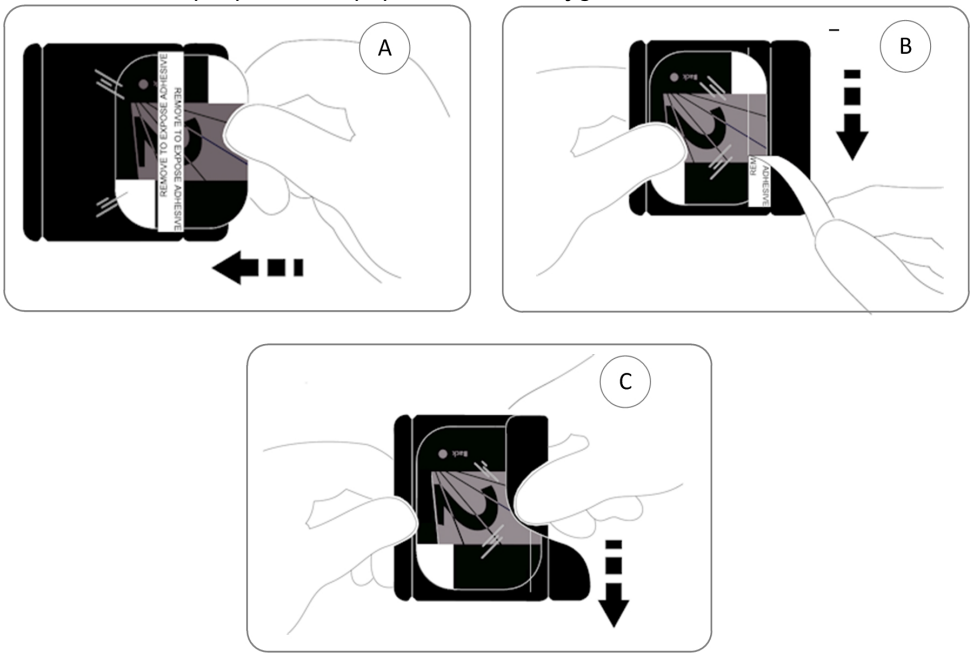
Important: Use a NEW hygienic sheath for each new patient to prevent cross contamination.

Important: Use a NEW hygienic sheath for each new image to prevent humidity and contamination of the plate.

Tip: If the imaging plate has not been used for a while, proceed to erase it first. See “Manually Erasing the Plate” on page 81.

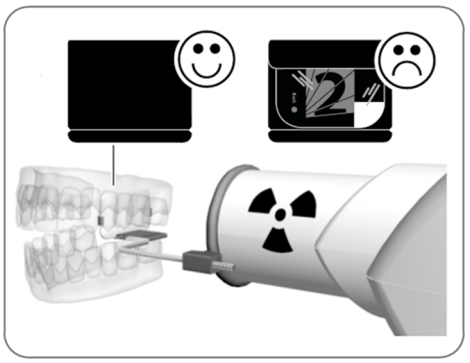
2 Insert the imaging plate into its protective hygienic sheath with the inactive side facing the adhesive strip, so the imaging plate’s size number is seen through the transparent side of the hygienic sheath and the orientation mark is visible in the bottom corner (**A**).

3 Peel the adhesive strip's protective paper to seal the hygienic sheath (**B**) and (**C**).



4 Handle the imaging plate by holding the hygienic sheath's empty edge where the silicone strip is.

5 Select an appropriate positioner for the region of interest and the size of the plate.



Performing the X-rays

Perform the required X-rays according to your clinical procedure.

It is recommended to continue using X-ray positioning techniques and tools to ensure the resulting image is complete and includes all the information required for diagnosis. To facilitate matching the orientation of the image in the software to the clinical reality, we recommend positioning the imaging plate in the mouth of the patient with the orientation mark always towards the bottom.

Important: Make sure the active side of the imaging plate is facing the X-ray tube.

To perform the X-rays, follow these steps:

1 Select the X-ray exposure time according to the region of interest and the patient type. Follow the user instructions of your X-ray generator. The following tables provide **guidelines** for exposure times for an X-ray generator at **70 kV** and **7 mA**. Add your values for the exposure time in seconds in the column on the right.

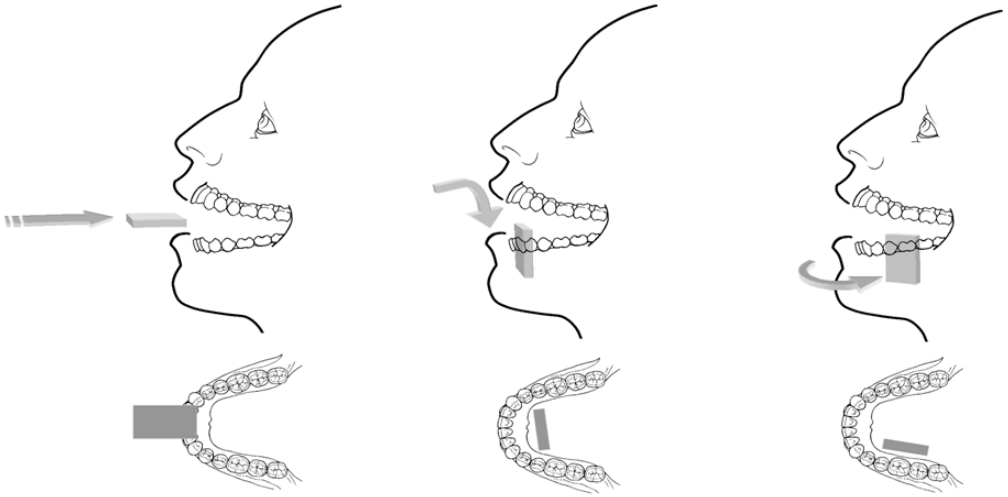
Important: These are suggested exposure times and need to be adjusted for your specific X-ray generator.

Tip: If images are too dark, reduce the exposure time. If images are too white or look grainy, increase the exposure time.

Table 5 Exposure Times

Parameter	DC-emitter, 7mA, tube length 20 cm		DC-emitter, 7mA, tube length 30 cm	
	Recommended Exposure Time(s)		Recommended Exposure Time(s)	
Upper Jaw	**60kV**	**70kV**	**60kV**	**70kV**
Incisors	0.1	0.08	0.2	0.16
Pre-molars	0.125	0.1	0.25	0.2
Molars	0.16	0.125	0.32	0.25
Lower Jaw	**60kV**	**70kV**	**60kV**	**70kV**
Incisors	0.1	0.08	0.2	0.16
Pre-molars	0.125	0.1	0.25	0.2
Molars	0.125	0.1	0.25	0.2
Bitewing	0.16	0.125	0.32	0.25

2 Position the CS 7200 imaging plate in the mouth of the patient depending on the region of interest.



3 Move the X-ray generator tube head close to the patient, and align it with the teeth of the patient and the CS 7200 imaging plate.

Important: Respect the X-ray techniques to avoid image distortion and minimize magnification.

Important: Make sure that the tube head is not shaking.

Important: Perform the required X-rays according to your clinical procedure.

4 Tell the patient to remain still without moving the tongue.

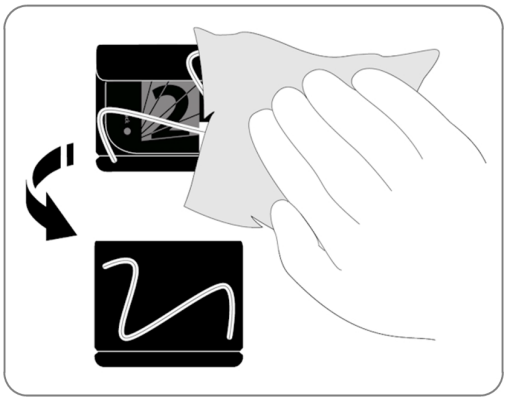
5 Position yourself either two meters behind the X-ray generator or outside the room.

Important: Make sure you can keep visual contact with the patient during the X-ray.

6 Trigger the X-ray with the remote switch of the X-ray generator.

7 Remove the CS 7200 imaging plate from the mouth of the patient.

8 Clean and disinfect the hygienic sheath after each patient. (See “Disinfecting the Hygienic Sheath and the Imaging Plates” on page 104.)

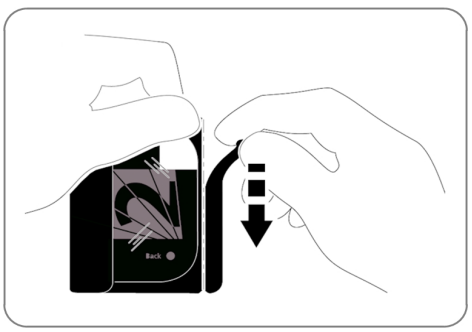


Scanning the Imaging Plate

To scan the imaging plate, follow these steps:

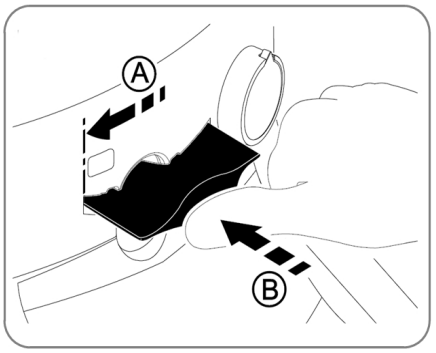
1 On the CS 7200 scanner, make sure the plate size selector knob is set for the same size as indicated on the plate.

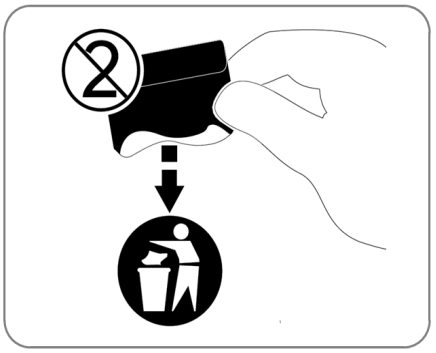
2 Open the hygienic sheath.



3 Load the plate into the scanner while positioning the plate to the left direction. The indication LED is blinking blue, indicating that the plate is loaded and the hygienic sheath can be removed.

> **Note:** Make sure you insert the plate with the active side facing up. If the plate is inserted when positioned upside down, an error message is displayed: *Plate loaded upside down*.





4 Remove the hygienic sheath to start the scanning process.

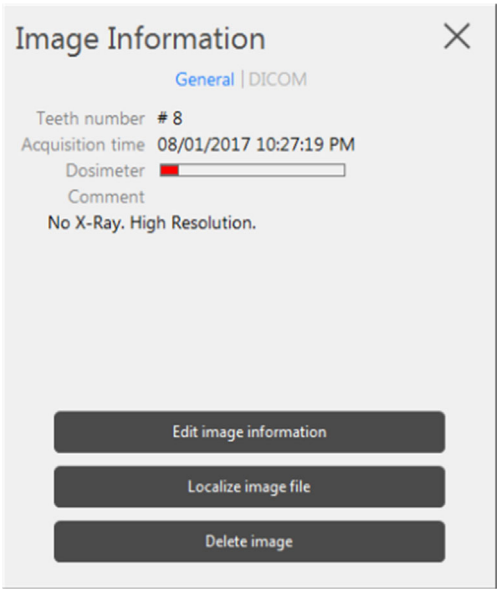
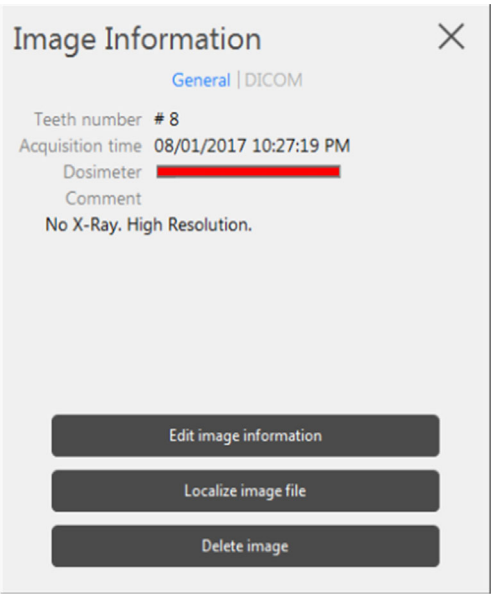
The CS 7200 starts scanning, and the indication LED blinks green during the process.

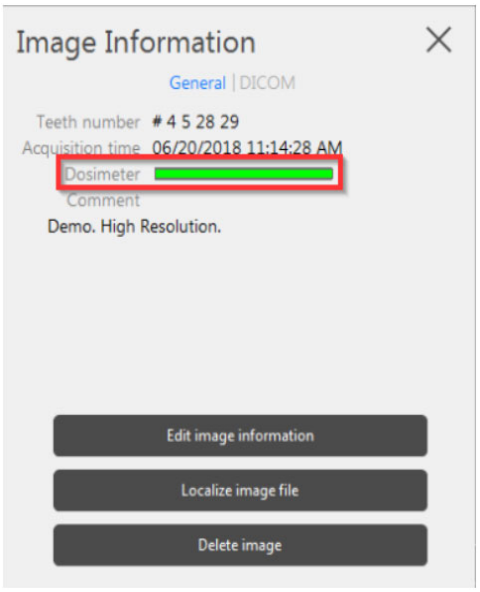
When the scan is complete, the imaging plate is erased and then ejected. The indication LED stops blinking and remains steady green.

The image is displayed on the imaging software main window.

5 Check the image quality.

The ideal image quality is when the indicator of the quality of exposure is a full green bar in the Control Panel. Avoid underexposed or overexposed images indicated by a partial or full red bar.

Underexposed Image	Overexposed Image
	



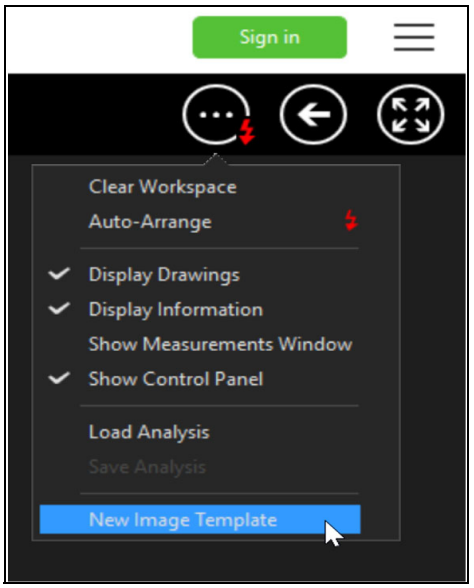
Preparing the Acquisition of FMS Images

To prepare the acquisition of FMS images, follow these steps:

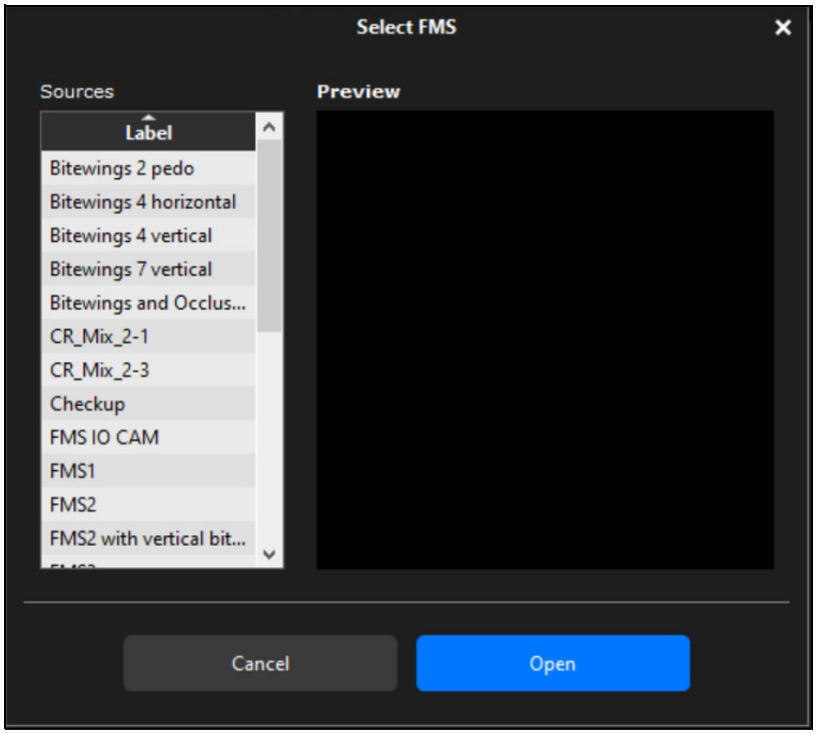
1 Access the **Dental Imaging Software**. See “Starting the Imaging Software” on page 68.

2 Click **Go to image viewer**.

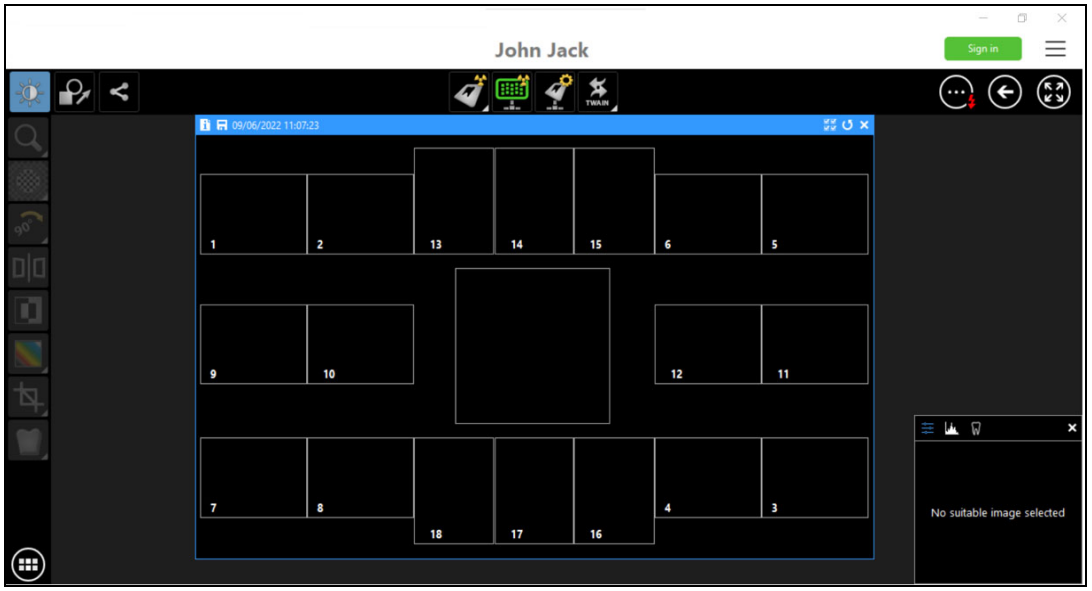
3 Click the **Use a format** button in the **Imaging** window toolbar to access the **Select a format** window.



4 From the list of available formats (templates), select the required template and click **Open**.



The selected format is loaded and displayed in the **Dental Imaging** window. The first frame for scan is highlighted in green.



5 Select an appropriate positioner for the region of interest and the size of the plate.

6 Prepare all imaging plates required for completing the FMS template. See “Preparing the Imaging Plates” on page 69.

7 Position the imaging plate in the mouth of the patient depending on the region of interest.

8 Move the X-ray generator tube head to the patient and align it with the teeth of the patient and the imaging plate.

Important: Make sure that the tube head is not shaking.

9 Select the X-ray exposure time according to the region of interest and the patient type. Follow the user instructions of your X-ray generator. The following tables provide **guidelines** for exposure times for an X-ray generator at **70 kV** and **7 mA**. Add your values for the exposure time in seconds in the column on the right.

Table 6 Exposure Times

Parameter	DC-emitter, 7mA, tube length 20 cm		DC-emitter, 7mA, tube length 30 cm	
	Recommended Exposure Time(s)		Recommended Exposure Time(s)	
Upper Jaw	**60kV**	**70kV**	**60kV**	**70kV**
Incisors	0.1	0.08	0.2	0.16
Pre-molars	0.125	0.1	0.25	0.2
Molars	0.16	0.125	0.32	0.25
Lower Jaw	**60kV**	**70kV**	**60kV**	**70kV**
Incisors	0.1	0.08	0.2	0.16
Pre-molars	0.125	0.1	0.25	0.2
Molars	0.125	0.1	0.25	0.2
Bitewing	0.16	0.125	0.32	0.25

Important: These are suggested exposure times and need to be adjusted for your specific X-ray generator. For dark images, reduce the exposure time, and for grainy images, increase the exposure time.

Acquiring FMS Images

To acquire FMS images, follow these steps:

1 For each imaging plate you prepared, perform the X-ray. See “Performing the X-rays” on page 70.

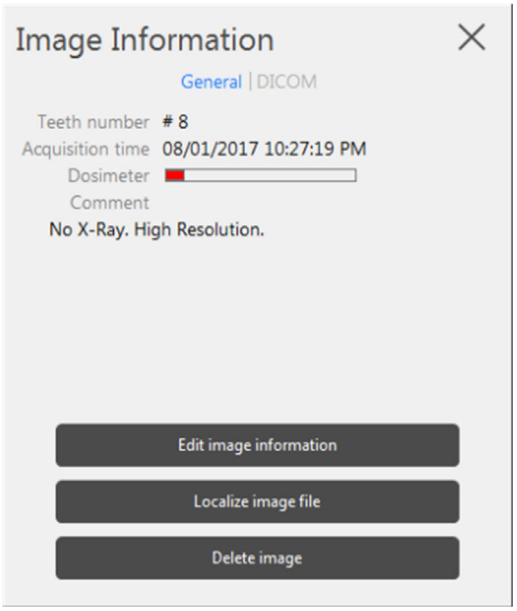
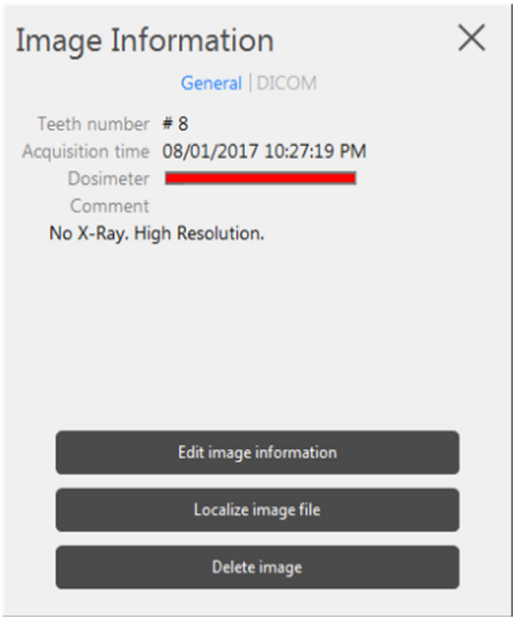
2 Scan all X-rayed imaging plates in the required order displayed on the **Dental Imaging** window. See “Scanning the Imaging Plate” on page 73.

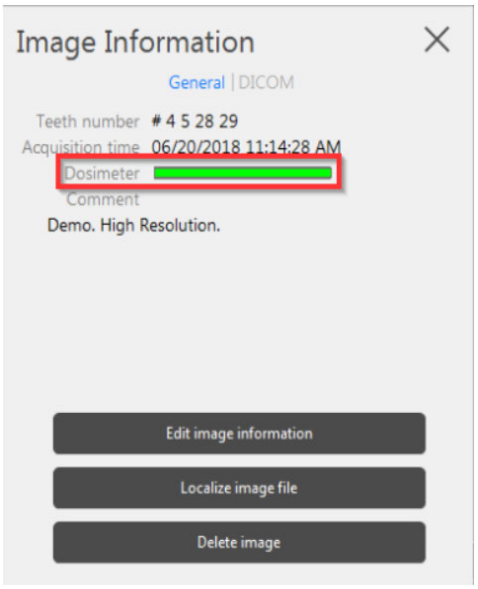
The next frame to be scanned is always highlighted in green on the displayed FMS format.

Tip: For an FMS, you can use the transportation box to sort the plates in the correct order.

3 Check the image quality.

The ideal image quality is when the indicator of the quality of exposure is a full green bar in the Control Panel. Avoid underexposed or overexposed images indicated by a partial or full red bar.

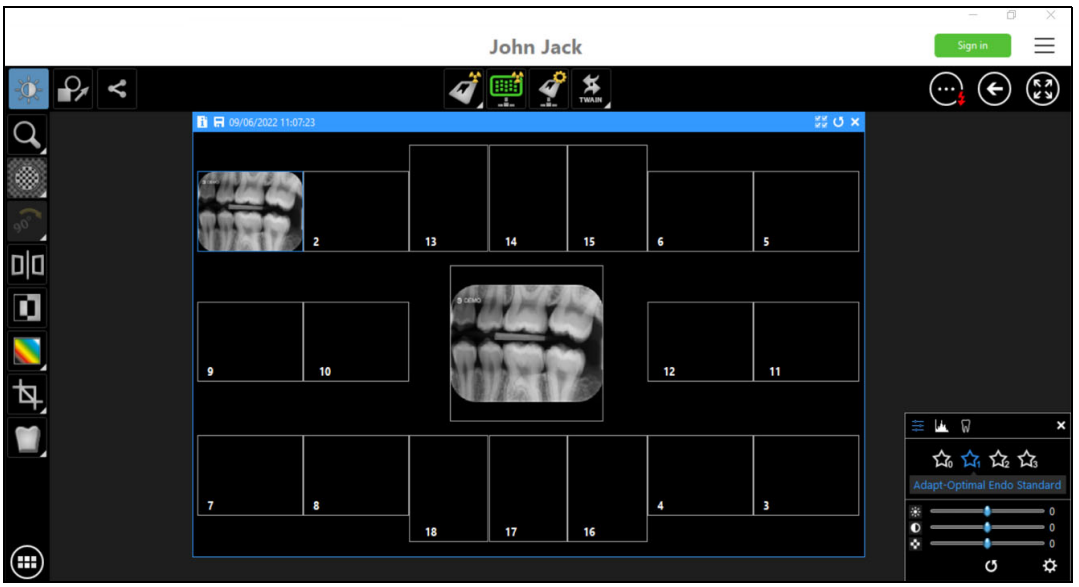
Underexposed Image	Overexposed Image
	



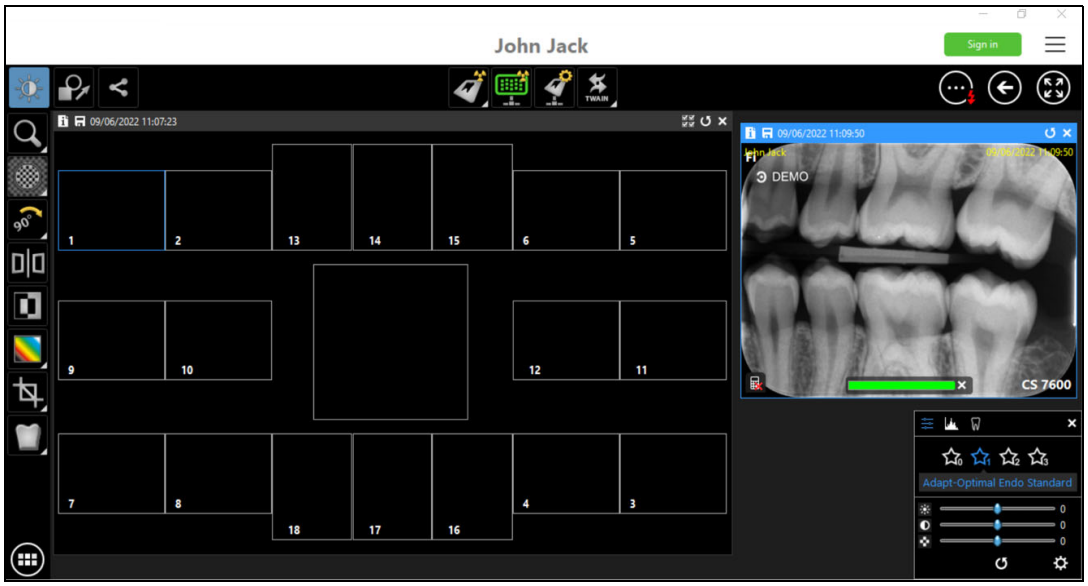
Retaking Images

If you need to retake images, after the FMS template acquisition is complete, follow these steps:

1 Click the frame for which you want to retake images. The selected frame is highlighted in green.



2 Using the mouse cursor, drag the selected image outside the template window.



3 Close the CS 7200 window with the image to be replaced. The image is deleted from the template.

4 Perform a scan again.

5 After the scan is complete, the new image is displayed in the FMS template.

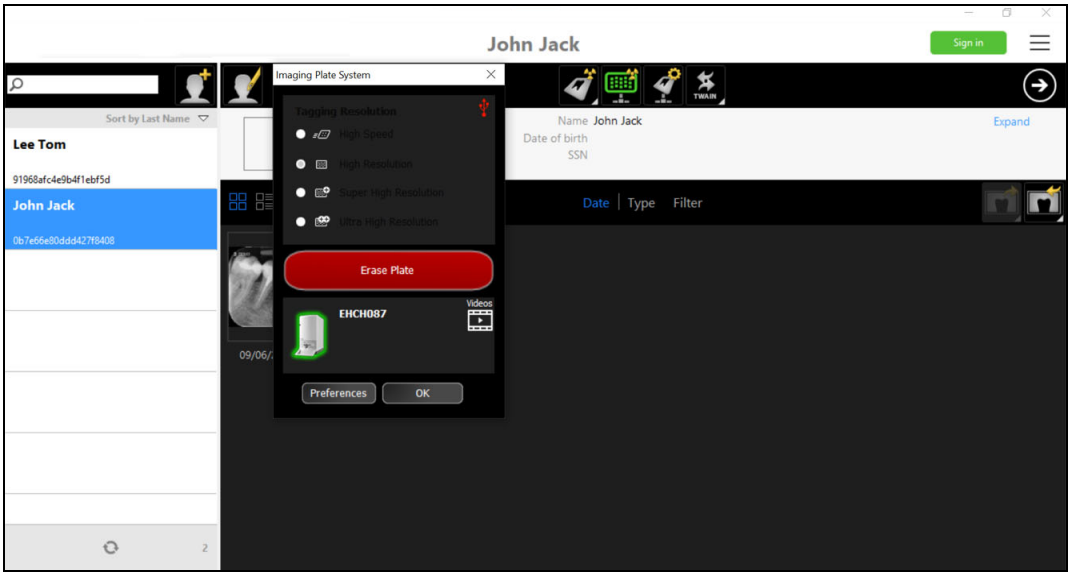
6 Close the template window to save the performed changes.

Manually Erasing the Plate

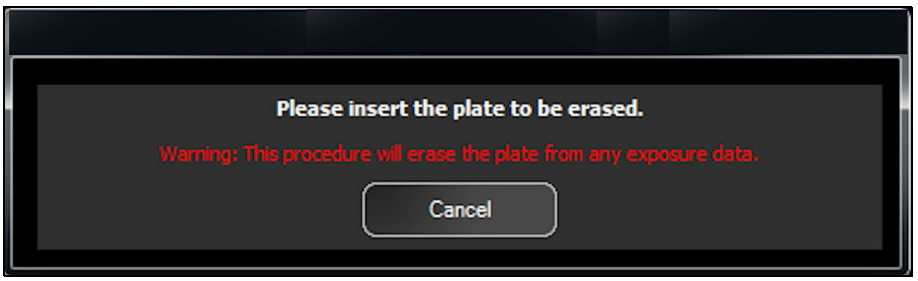
To manually erase a plate, perform the following steps:

1 On the **Dental Imaging** software main toolbar, click the **CS 7200 Configuration** icon.

The **Imaging Plate System** window is displayed:

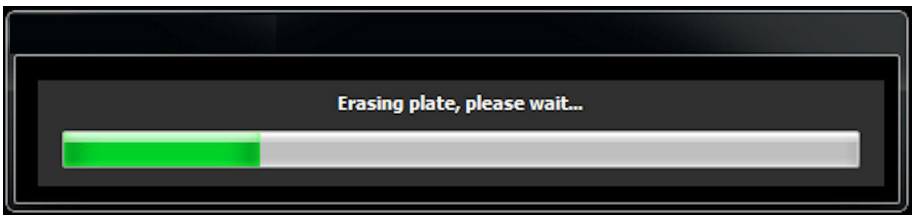


2 Click **Erase Plate**. The following dialog box is displayed:



3 Load the plate into the scanner.

4 Wait until the erase process is complete.



To erase more plates, perform steps 1 - 4.

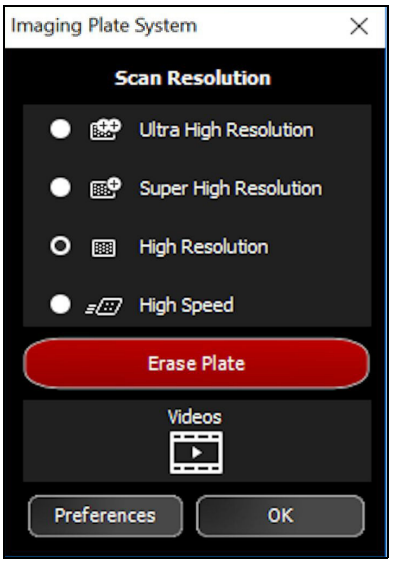
5 After the erase process is complete, close the **Imaging Plate System** window.

Changing Scanner User Preferences

To change the scanner user preferences, perform the following steps:

1 On the **Dental Imaging Software** main toolbar, click the **CS 7200 Configuration** icon.

The **Imaging Plate System** window is displayed:



2 Click **Preferences** to open the **CS 7200 Preferences** window.

The **CS 7200 Preferences** window contains three tabs:

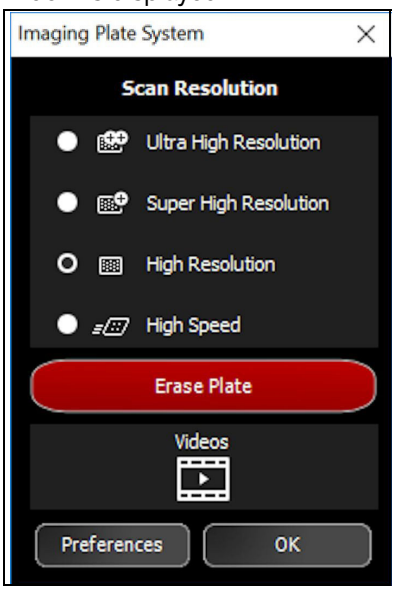
- General Settings
- Scan & Go
- Scanners Connections

Changing Scan Resolution

To change scan resolution, perform the following steps:

1 On the **Dental Imaging Software** main toolbar, click the **CS 7200 Configuration** icon.

The **Imaging Plate System** window is displayed:



2 Select the desired scan resolution, and click **OK** to save the selection.

7 Acquiring Images Using Scan & Go

Introduction

This chapter describes the acquisition procedure for configurations with the Scan & Go device.

Note: Using the Scan & Go option streamlines and shortens the scanning process. The scanned image reaches its destination automatically; there is no need to select the destination workstation when scanning the imaging plate. In FMS mode, the image automatically populates its designated frame in the template.

A typical workflow consists of the following steps:

- Accessing the imaging window. See “Starting the Imaging Software” on page 68.
- When working with multiple images, selecting or “Opening the Image Acquisition Interface” on page 87.
- Preparing the imaging plates. See “Preparing the Imaging Plates” on page 69.
- Tagging the imaging plate with the Scan & Go. See “Tagging the Imaging Plate with the Scan & Go” on page 86.
- Positioning, exposing, and removing the imaging plate from the patient’s mouth. See “Performing the X-rays” on page 86.
- Disinfecting the hygienic sheath. See “Disinfecting the Hygienic Sheath and the Imaging Plates” on page 104.
- Scanning the imaging plates. See “Scanning the Imaging Plates” on page 87.
- Reviewing the scanned image on the image Acquisition interface. See “Processing the Images” on page 89.
- Storing the image in the CS Imaging software. See “Re-Tagging Imaging Plates” on page 90.

Acquiring a Single Image Using Scan & Go

Note: Keep the image Acquisition interface open throughout your exam acquisition session; close it only after you have completed scanning and optimizing all images.

Starting the Imaging Software

Start your Imaging software. See “Starting the Imaging Software” on page 68.

Preparing the Imaging Plates

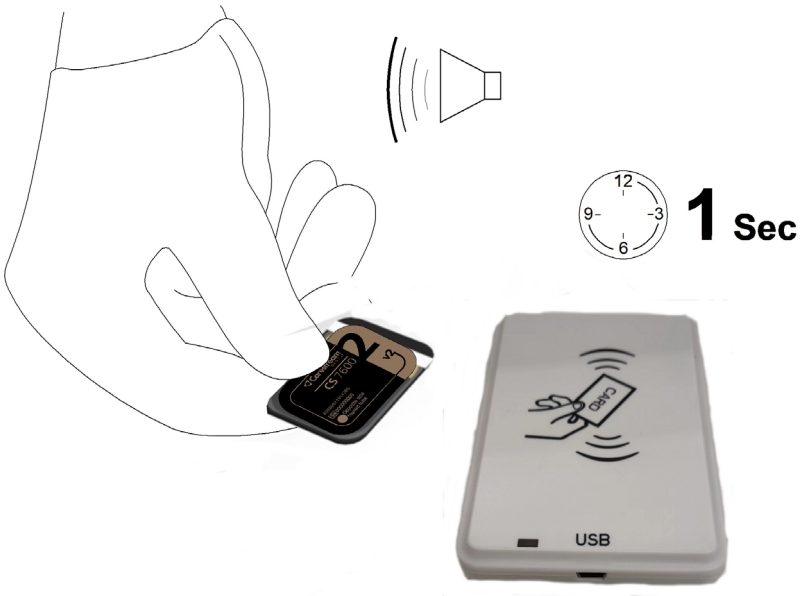
Prepare the intraoral imaging plates. See “Preparing the Imaging Plates” on page 85.

Tagging the Imaging Plate with the Scan & Go

To tag the imaging plate using the Scan & Go device, follow these steps:

1 Place the imaging plate near the Scan & Go device to record the exam acquisition data.
The image Acquisition interface marks the corresponding frame as recorded (frame color changes to indicate recorded status).

Two audible beeps and fast blinking of the green LED indicate the exam acquisition information was recorded.



2 Perform step 1 for each imaging plate.

Tip: To display the imaging plate's tagged information at any time, place the imaging plate on top of the Scan & Go device, and check the Imaging plate Scan & Go information in the **Settings-Imaging plate information** tab.

To record exam acquisition data on an imaging plate that was already recorded, see "Acquiring Multiple Images (FMS) Using Scan & Go" on page 87.

Performing the X-rays

Perform the required X-rays according to your clinical procedure. See "Performing the X-rays" on page 70.

Scanning the Imaging Plates

To scan the imaging plates, follow these steps:

1 Perform steps 1 - 3 of “Scanning the Imaging Plate” on page 73.

> **Note:** After the imaging plate has been scanned, the image is sent straight to the previously assigned workstation.

2 Perform steps 6 - 7 of “Scanning the Imaging Plate” on page 73.

Acquisition Related Procedures

See “Processing the Images” on page 89.

Acquiring Multiple Images (FMS) Using Scan & Go

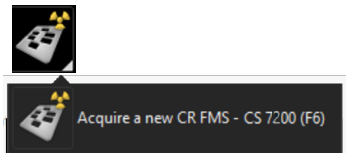
Starting the Imaging Software

Start your Imaging software. See “Starting the Imaging Software” on page 68.

Opening the Image Acquisition Interface

To open the image Acquisition interface, follow these steps:

1 Click the **Imaging** window icon. (Alternatively, double-click the selected patient name.) The patient’s imaging window opens.

2 To access the image Acquisition interface, select 

.

3 To change the scanning resolution for this exam acquisition (for non Scan & Go configurations), go to the scanner resolution settings. See “Changing Scan Resolution” on page 83.

4 Verify that the Scan & Go device is connected.

Preparing the Imaging Plates

Prepare the intraoral imaging plate. See “Preparing the Imaging Plates” on page 85.

Tagging the Imaging Plate with the Scan & Go

See “Tagging the Imaging Plate with the Scan & Go” on page 86.

Performing the X-rays

Perform the required X-rays according to your clinical procedure.

Scanning the Imaging Plates

After the imaging plate has been scanned, it is sent to the previously assigned workstation to the proper frame it was tagged to in the FMS.

See “Scanning the Imaging Plate” on page 73.

Acquisition Related Procedures

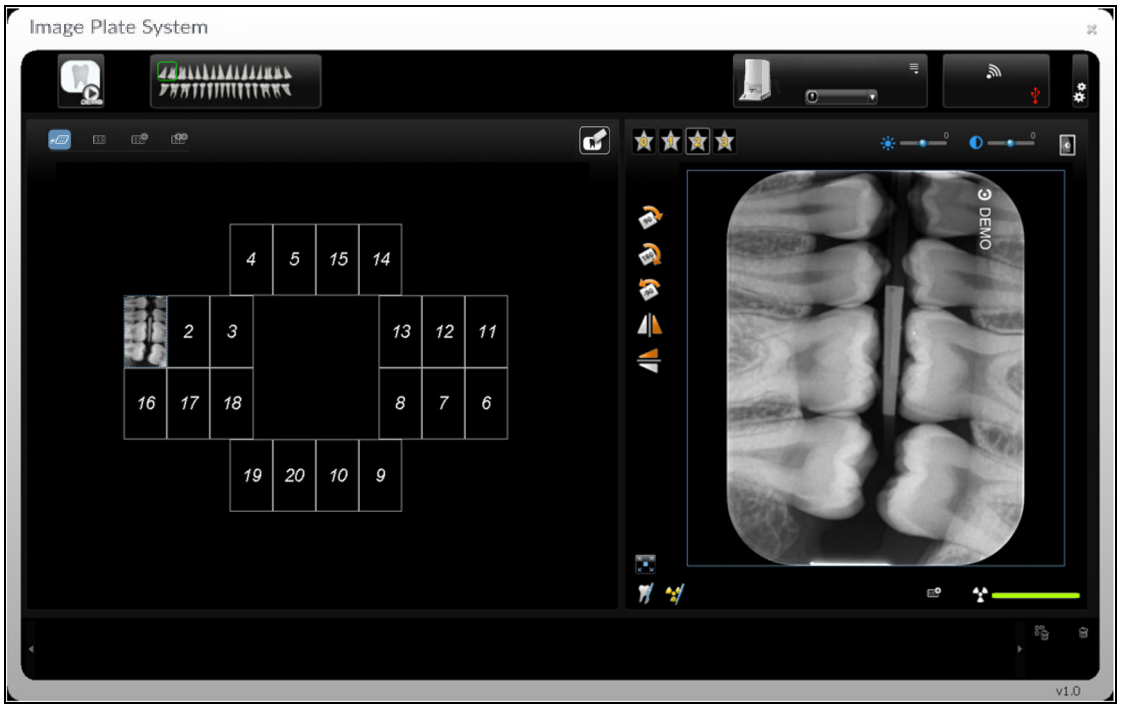
See “Processing the Images” on page 89.

8 Acquisition-Related Procedures

Processing the Images

Important: The imaging plate has a marker attached to its inactive side. It will indicate if the imaging plate has been exposed from the wrong side contrary to its intended use. If the shadow of the marker is visible in the X-ray image, the imaging plate was exposed from the inactive side contrary to its intended use. The image orientation can be corrected using the mirroring tool in the acquisition software. If a diagnosis is not possible in the area of the marker, the X-ray should be repeated.

Figure 13 Image Acquisition Interface



To process the scanned images from your workstation, follow these steps:

1 The scanned image populates the first available frame. If there is no such frame (all frames are occupied, applicable only when working with FMS mode), the image is routed to the Images Gallery. In Image Acquisition mode, a new frame is added to the images layout.

For manual reordering of the frames, drag and drop the image to the desired frame. If the frame is populated with an image, the former image in the frame will be moved automatically to the Images Gallery when the new image is dropped within it.

Note: When exiting the image Acquisition interface, images stored in the Images Gallery are sent to the Imaging software database.

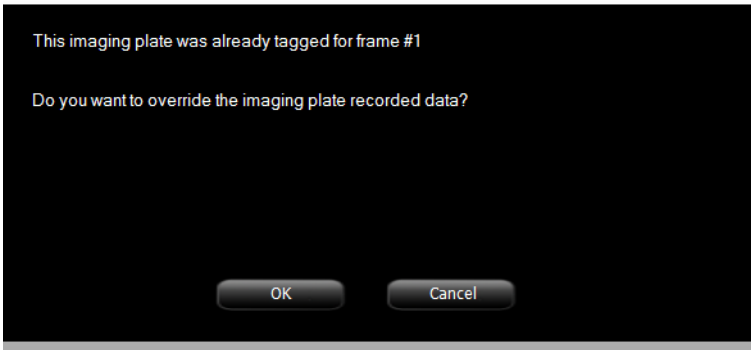
2 Use the image Acquisition interface processing options to optimize the image. See “CS 7200 Image Acquisition Interface Overview” on page 61.

3 Click ✖ **Close** (top-right corner) to exit the image Acquisition interface and return to the Imaging software. Images are transferred from the image Acquisition interface to the Imaging software automatically.

Re-Tagging Imaging Plates

To tag an imaging plate that was already recorded with exam acquisition information (re-tagging), follow these steps:

1 Place the imaging plate on the Scan & Go device. The following prompt is displayed.



2 Click **OK** to re-tag this imaging plate. The imaging plate is tagged with the current exam acquisition and the current active frame information. If you do not want to re-tag the imaging plate, either remove the imaging plate from the Scan & Go surface or click **Cancel** in the overwrite prompt. The current tagged data as displayed in this prompt remains unchanged.

3 Wait until the exam acquisition information tagging is completed as indicated by an audible beep, successive short flashes of the LED, and a change of color in the frame border and number.

Storing the Images

Image management (storage and retrieval) is performed through the Imaging software. See your CS Imaging software documentation.

Clearing Scanner Memory

When the image Acquisition interface is open at the designated workstation, the scanned imaging plate image is automatically routed to the correct exam acquisition.

If the image Acquisition interface is closed, the scanned imaging plate image is stored in the scanner's memory. The scanner's storage capacity is 25 images.

To clear the scanner's memory, follow these steps:

1 Click the drop-down arrow  in the Scanner Area section (4) of the image Acquisition interface to display the images saved in the scanner memory.

2 Drag an image from the image list to the Images Display Area (10).

3 If the image should be deleted, drag the image to the Images Gallery (11), and click **Delete** (18).

Erasing the Imaging Plates

The imaging plates are automatically erased and ejected after their information is scanned. Exposure to light, and so forth, requires manually erasing the imaging plates before use. To erase the imaging plate manually, see “Manually Erasing the Plate” on page 81.

Note: Erasing the imaging plate manually does not erase the recorded exam acquisition information.

9 Scanner Settings

The following scanner settings are explained in this chapter:

- Scan Resolution. See “Changing Scan Resolution” on page 93.
- General Settings. See “General Settings Tab” on page 96.
- Scan & Go. See “Scan & Go Tab” on page 99.
- Scanners Connections. See “Scanners Connections Tab” on page 100.

Changing Scan Resolution

To change scan resolution, follow these steps:

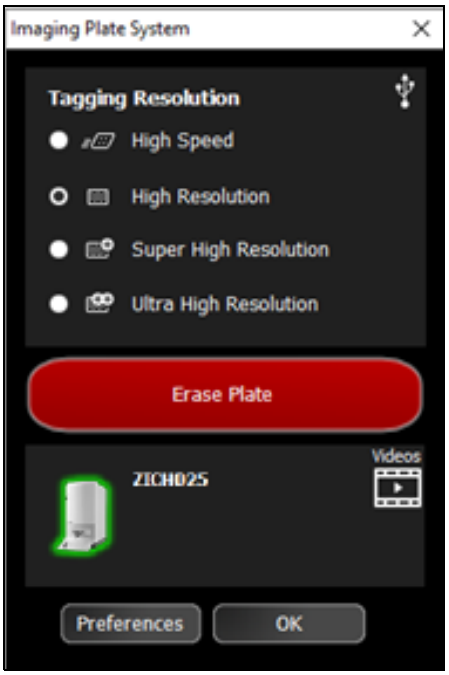
1 On the **Dental Imaging Software** main toolbar, click the **CS 7200 - Configure** icon.
The **Imaging Plate System** configuration window is displayed:

2 Select the desired scan resolution, and click **OK** to save the selection.

Working with Settings

To change settings for the scanner, follow these steps:

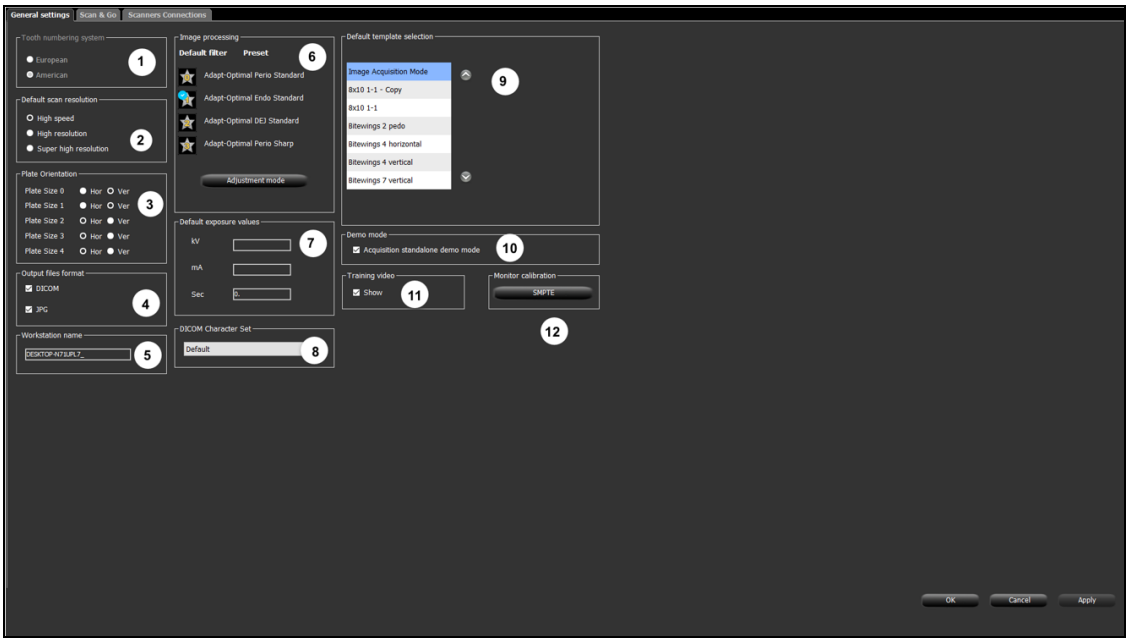
1 On the **Dental Imaging Software** main toolbar, click the **Imaging Plate System** configuration icon. The **Imaging Plate System** window is displayed.



2 Click **Preferences**. The **Imaging Plate System Preferences** window is displayed.

OR

In the **image Acquisition interface**, click  . The **Imaging Plate System Preferences** window is displayed.



Three tabs are available:

- **General Settings**. See “General Settings Tab” on page 96.
- **Scan & Go**. See “Scan & Go Tab” on page 99.
- **Scanners Connections**. See “Scanners Connections Tab” on page 100.

General Settings Tab

In the **General Settings** tab you are able to set the defaults for image acquisition.

Table 7 Image Acquisition Interface General Settings Key

1	**Tooth Numbering System**	Set the tooth numbering system (European or American). When using individual tooth selection, the tooth number is stored in the image's DICOM tags.
2	**Default Scan Resolution**	Set the default scan resolution for images to be scanned. **Note:** This does not change the scanner's default resolution, which is for images scanned when the image Acquisition interface is not connected to the scanner (No ID images). The scanner's default resolution is High Speed. **Note**: Any changes made in the image Acquisition interface when the scanner is linked peer-to-peer to the image Acquisition interface automatically change the scan resolution in the scanner.
3	**Default Orientation**	Set the default plate orientation to vertical or horizontal to ensure correct orientation.
4	**Output Files Format**	The scanned image save file format. Scanned images are always saved as DICOM files, and there is also an option to save the scanned image in JPEG format.
5	**Workstation Name**	If needed, change the workstation name by entering the new name.
6	**Image Processing**	**Default Filter and Preset:** Set the default filter to be applied to the acquired image. (The installation default is **Endo**). The image processing is managed by CS Adapt. • **Perio** (Periodontal) filter: Designed to assist in detecting disease or inflammation in the interface between the gum (gingival part) and the bone. • **Endo** (Endodontic) filter: Provides overall good contrast and look of the image, with a high-quality view of the root canals. It reveals any diseases or injuries that affect the root tips or nerves in the teeth. • **DEJ** (dentine to enamel junction) filter: Designed to improve the contrast resolution between the dentine and the enamel. It enables the dentist to detect small caries and evaluate the inspected region. **Preset** enables setting default image processing filter presets that are applied after the image is acquired. • **Sharp**: Sharpening filter for the sharpest look, contrast transition emphasis. • **Soft**: Soft look, smooth transition from high to low density. • **Standard**: Intermediate processing, between sharp to soft. **Adjustment mode**: Imaging processing adjustment mode enables setting the optimal filter and preset combinations for each filter type. **Note**: If you acquire images in Adjustment mode, they are saved under the patient in the imaging software database.
7	**Default Exposure Values**	Enter the default X-ray exposure values to be added to all scanned images' attributes (DICOM tags).
8	**DICOM Character Set**	**Note**: Only your IT Administrator should change these settings. Select the correct DICOM character set encoding for the country and area to ensure the information is rendered correctly on DICOM viewers.
9	**Default Template Selection**	Set the template used when opening a new exam acquisition, or change the current template (applicable to a newly opened acquisition session ONLY, before images have been retrieved from the scanner).

Table 7 Image Acquisition Interface General Settings Key

10	**Demo Mode**	This option puts the **Demo Mode** icon in the top-left corner of the image Acquisition window and populates one frame in the Images Display Area with a demo image each time the icon is selected. **Tip**: Use for setting default presets in **Adjustment** mode.
11	**Training Video**	Select the option to show the training video.
12	**Monitor Calibration**	Displays an SMPTE screen for monitor calibration.

Working with the General Settings Tab

To work with the **General Settings** tab, follow these steps:

1 Click **Settings** to open the **General Settings** tab.

2 In the **Tooth Numbering System** area, select the **European** or **American** option.

3 In the **Default scan resolution** area, select the default resolution for scanning.

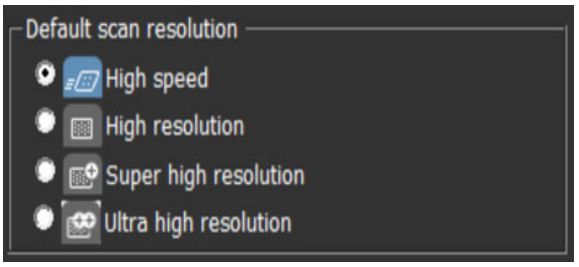
4 In the **Default Orientation** area, select the direction that the image is to be turned, clockwise or counter clockwise.

5 In the **Output Files Format** area, select the **JPG** option if you want the images to be saved in JPEG format as well as the default DICOM format.

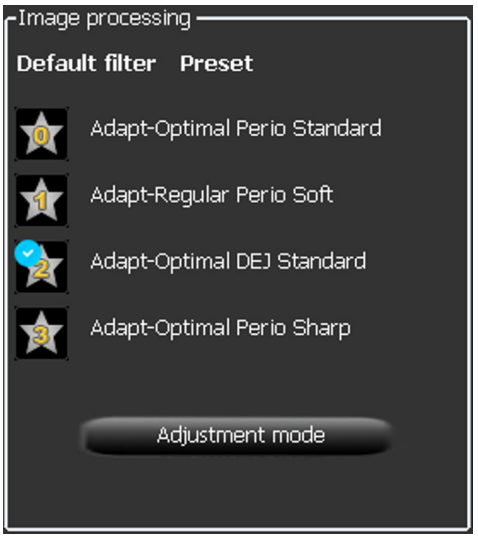
> **Note:** In the **Output Files Format** area, the **DICOM** selection box cannot be deselected.

6 To select a default scan resolution and CS Adapt filters, do the following:

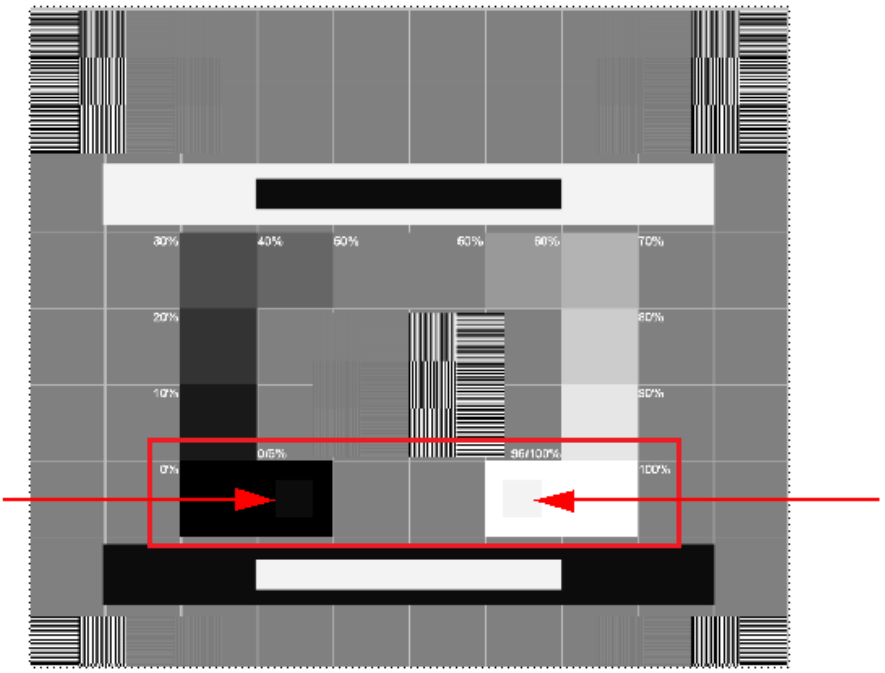
- In the **Default scan resolution** area, select **High speed**, **High resolution**, **Super high resolution**, or **Ultra high resolution** for the scan resolution.



- Click **Adjustment mode** to change the default filter in CS Adapt.



7 To display the SMPTE screen, in the **Monitor calibration** area, click **SMPTE**.
The SMPTE window is displayed.



8 Use the monitor brightness & contrast controls until you clearly see the 5% and 95% calibration squares located in the 0% and 100% areas (indicated by red arrows in the image above).

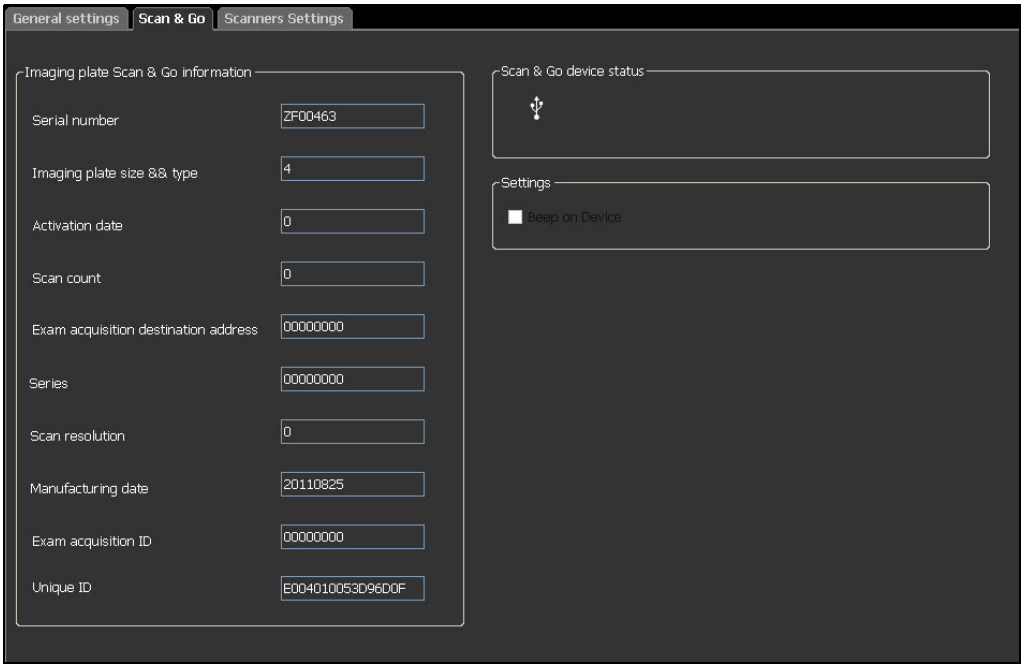
9 In the **Settings** tab, when you have finished selecting your general settings, click one of the following:

- Click **Apply** to apply your settings.
- Click **Cancel** to exit to the main screen without saving changes.
- Click **OK** to save the changes and exit to the main screen.

Scan & Go Tab

The **Imaging plate Scan & Go information** fields are populated with the imaging plate's identifying information when it is placed on the Scan & Go device.

Figure 14 Scan & Go Tab



The **Scan & Go** tab contains the following information:

- **Serial Number**
- **Imaging Plate Size & Type**
- **Activation Date**–The date of the first time the plate was used.
- **Scan count**–The number of times the plate has been scanned.
- **Exam Acquisition destination address**
- **Series**–Frame identification number.
- **Scan resolution**
- **Manufacturing date**–The date the plate was manufactured.
- **Exam Acquisition ID**
- **Unique ID**
- **Scan & Go device status**–Shows if the Scan & Go is connected  (white icon) or not connected  (red icon).

- **Beep on Device** option–When the **Beep on Device** option is selected, the Scan & Go makes a sound each time an imaging plate is tagged. If the **Beep on PC** option is selected, a sound is made on the PC each time an imaging plate is tagged.

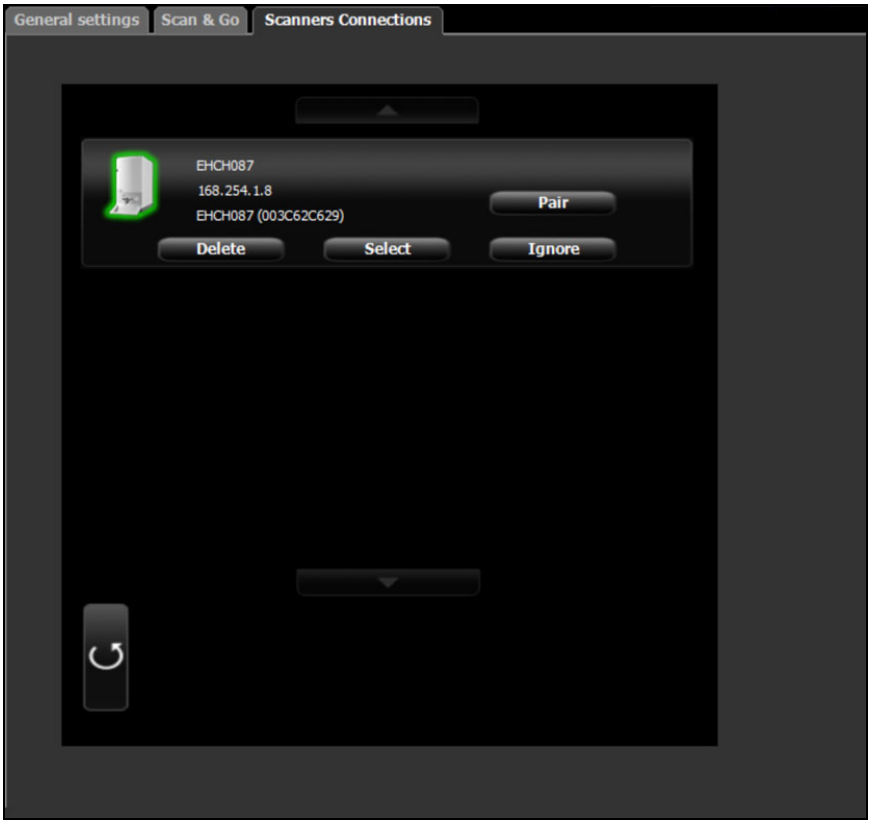
Note: The Imaging plate Scan & Go information in the **Scan & Go** tab is read-only.

Scanners Connections Tab

In the **Scanners Connections** tab, you are able to perform the following:

- **Delete** a scanner connection that is no longer being used (after a scanner has been replaced).
- **Pair/Unpair** a peer-to-peer link between a scanner and a workstation.
- **Connect/Ignore** a scanner from the active Scanner List.
- Rearrange the Scanner List by clicking the **Select** button, which moves the scanner to the top of the Scanner List.

Figure 15 Scanners Connections Tab



Working with the Scanners Connections Tab

To work with the **Scanners Connections** tab, follow these steps:

1 To remove a scanner from the Scanner List, click **Ignore**.

2 To add a scanner to the Scanner List, click the **Connect** button for that scanner.

> **Note:** If there are scanners on the network which you don't want to use, click **Ignore.**

3 To completely remove a scanner that is no longer being used from the **Scanners Connections** tab and the image Acquisition interface, click **Delete**.

> **Note:** Scanners connected to the system will still be detected and added to the list of scanners in the **Scanners Connections** list after restarting the image Acquisition interface.

4 In the image Acquisition interface, click one of the following:

- Click **Apply** to apply your settings.
- Click **Cancel** to exit to the main screen without saving changes.

5 Click **OK** to save the changes and exit to the main screen.

About Peer-to-Peer Connection

A peer-to-peer (P2P) connection creates a dedicated link between a scanner (or more than one scanner) and a dedicated workstation. When a plate is scanned with a peer-to-peer connection, there is no need to select a workstation/room. The scanner automatically scans the plate as soon as it is fed into the scanner and sends the image to the paired workstation.

> **Tip:** If your workstation is the only one using a particular scanner, you can save time—not having to select a scanner each time you make a scan—by making a peer-to-peer link from the scanner to the computer.

There are four possible statuses for the peer-to-peer connection:

- **Available for Peer-to-Peer connection**—The scanner is available for a direct peer-to-peer connection. This status may be identified when the **Pair** button 

is available.
- **Paired**—The scanner is connected peer-to-peer to this workstation. This status may be identified when the **Paired** message 

is shown and the **Unpair** button 

is available.
- **Paired to Doctor x**—The scanner is already connected peer-to-peer to another workstation.
- **Unavailable for Peer-to-Peer**—This status is displayed when a scanner in the Scanners list is not connected to your workstation or any other workstation and is not available for connecting

to your workstation. This may be identified by the absence of the **Pair** button 

and the **Paired** 

and **Paired to** messages.

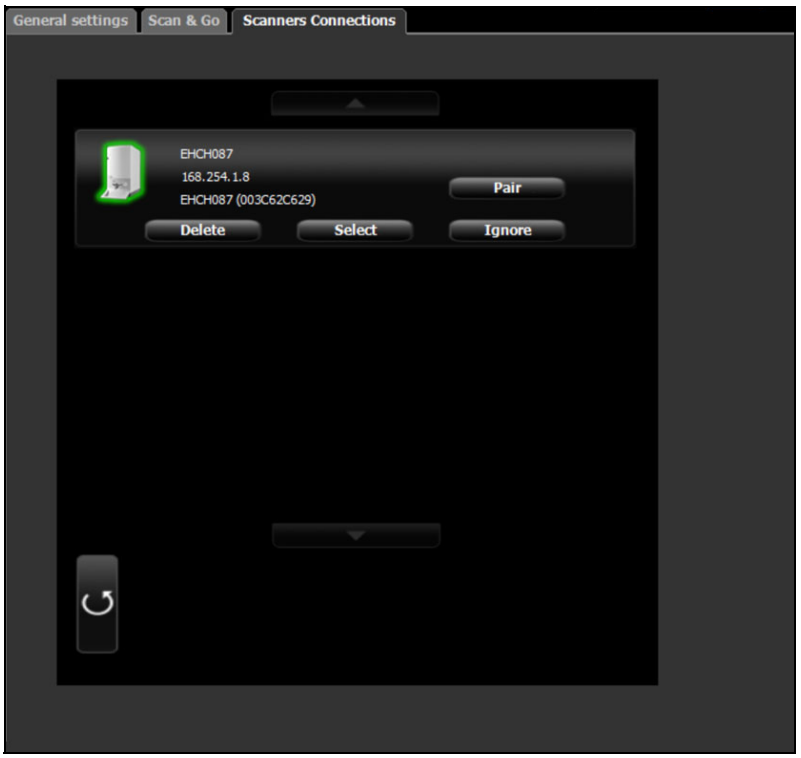
> **Note:** The tagged imaging plate is sent to the proper room, defined by Scan & Go, even when in peer-to-peer mode.

A peer-to-peer connection makes a scanner dedicated to a workstation. This saves time by not having to select a scanner each time you make a scan.

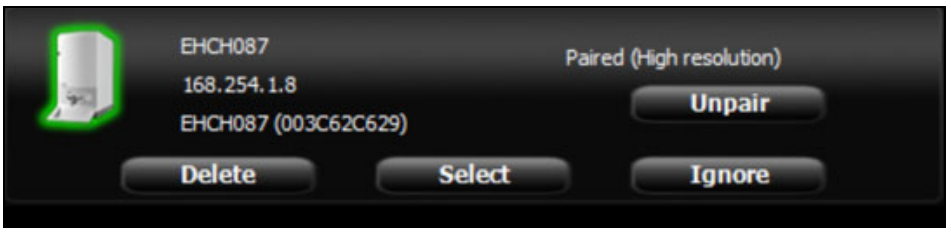
Creating a Peer-to-Peer Connection

To create a peer-to-peer connection, follow these steps:

1 In the **Scanners Connections** tab, click the **Pair** button on the scanner you want to pair with the image Acquisition interface.



The status (located above the **Pair/Unpair** button) changes from **Connected** to **Paired**, and the **Pair** button changes to **Unpair**.



Disconnecting a Peer-to-Peer Connection

To disconnect a peer-to-peer connection, click the **Unpair** button on the scanner you want to disconnect.

10 Maintenance

For complete maintenance information, refer to the **CS 7200 Safety, Regulatory, and Technical Specifications User Guide**.

Imaging Plate Care

If used with care, the imaging plates can be used indefinitely until physically damaged. However, the imaging plates will show wear over time due to continuous use. Inspect the imaging plates regularly, and replace them if they are scratched and/or show signs of excessive wear.

CAUTION: To prevent damage to the imaging plates and the possibility of image artifacts, avoid contact between the imaging plates and the following materials/solutions/solvents: Isopropyl alcohol, hydrogen peroxide, and other peroxides; citrus-based cleaners, hand lotions, and waterless hand sanitizers, as well as surfactants and lubricants.

Handling and Storage of Imaging Plates

- Imaging plates should be stored in their original packing or storage box when they are not in use. Always store imaging plates in a dark and dry place.
- Do not expose the imaging plates to light for long periods, as this can have a degrading effect.
- Do not store imaging plates in hot or moist conditions.
- Do not fold, crease, or bend the imaging plates.
- Avoid touching the active side of the imaging plates, and be careful not to drag the active side of the imaging plate across any surface, as this will damage the imaging plate.
- Do not leave imaging plates where they can become damaged by liquid or chemical spills.
- Do not autoclave.

Cleaning the Imaging Plate

CAUTION: Read and follow the instructions in the Safety Data Sheets (SDS) for Screen Cleaner P/N 1030428.

Clean the imaging plate to remove dirt, dust particles, fingerprints, and so forth that could affect image quality.

Cleaning Materials

- Clean, dry, non-abrasive, lint-free wipes or cloths
- Screen Cleaner P/N 1030428 (Ask your Carestream Dental representative.)

Cleaning Method

To clean the imaging plates, follow these steps:

1 Fold a non-abrasive, lint-free wipe or cloth and dampen with a small amount of the solution. Be careful not to pour the solution directly on the imaging plate. Excessive amounts of the screen cleaner may damage the imaging plate.

2 Wipe the imaging plate thoroughly dry with a clean, dry, non-abrasive, lint-free cloth to remove residual cleaner. DO NOT LEAVE THE IMAGING PLATE TO AIR-DRY. Apply pressure to remove persistent dirt, if necessary.

Disinfecting the Hygienic Sheath and the Imaging Plates

CAUTION: Do not soak the hygienic sheath in any cleaning or disinfecting solutions. Do not autoclave; autoclaved hygienic sheaths must be discarded.

Frequency of Disinfection

The hygienic sheath is the primary means of infection control and protection from contaminated imaging plates.

Disinfect the imaging plate **after every use** (after the image plate is scanned), before it is inserted in the hygienic sheath for the next use.

Disinfection Solutions

To disinfect, use either a self-prepared solution or a commercially prepared product that adheres to the following specifications and restrictions:

- Diluted bleach solution: Dilute one part 5.25% sodium hypochlorite with ten parts of water.
- A commercially prepared equivalent solution of diluted bleach that does not contain any ingredients (Isopropyl alcohol, hydrogen peroxide and other peroxides; citrus-based cleaners, hand lotions, and waterless hand sanitizers, as well as surfactants and lubricants) that can cause damage to the hygienic sheaths and imaging plates.

Disinfection Method

CAUTION: If a commercially prepared equivalent solution of diluted bleach is used, follow the manufacturer's specifications and warnings.

To disinfect the hygienic sheaths and imaging plates, follow these steps:

1 Moisten thoroughly (but not dripping) a non-abrasive, lint-free cloth with the prepared diluted bleach and wipe the hygienic sheath clean.

2 After one minute, wipe off the bleach residue with a new, soft, lint-free cloth dampened with water.

3 Wipe dry with a non-abrasive, lint-free cloth.

Disposing of the Imaging Plate

Important: The imaging plate contains Barium and should be considered hazardous or special waste in specific conditions at the end of its useful service life. For disposal or recycling information, contact your local authorities.

Scanner Care

Cleaning the Scanner Body

Use disinfection wipes for medical equipment to clean the scanner body thoroughly from all sides, including the tray.

WARNING: It is the user's responsibility to disinfect the imaging plate tray daily to prevent cross contamination.

Scan & Go Device Care

Cleaning the Scan & Go

Use disinfection wipes for medical equipment to clean the Scan & Go device thoroughly from all sides.

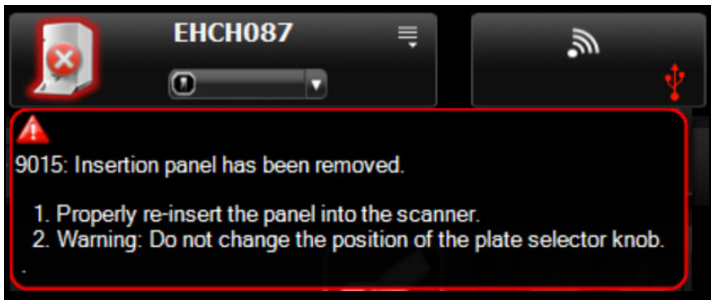
11 Troubleshooting

Quick Troubleshooting

Occasionally, malfunctions can occur during use. In the event of an incorrect action, an error message is displayed.

During the CS 7200 power up, the system performs a self-test, ejects a plate (if left in the scanner), and reports whether the system is ready for operation or if a malfunction is detected.

The detected malfunction is indicated by the CS 7200 LED status and sound notification and/or by an error message that displays on screen.



When the system functions properly, the LED is green. If the LED color is yellow or red, it indicates a malfunction.

Indication LEDs Statuses

The table below lists the scanner LEDs status indicator states that require a corrective action:

LED Color	Scanner State	Remark
Yellow	Power up	
Yellow (door closed)	Stand by	Unactivated, memory full, front panel unmounted.
Blinking Red with Buzz	Recoverable error	Remove plate and scan again.
Blinking Red	Error	Call Service. Press power button to shut down.

The following table lists the error messages, their description, and the action to take:

IMPORTANT

If an Error Code message is displayed, the malfunction persists, or more serious conditions occur, contact a qualified technician. When you call the qualified technician, have the following information ready:

- **Model Serial Number**
- **Error Code Message**

Table 8 System Errors

Symptom	Cause	Corrective Action
Plate size selector knob is stuck.	• The scanner is turned off. • Door is closed.	• Turn on the scanner. • Check the error message on ACQ software.
The plate cannot be loaded into the scanner.	• The scanner is turned off. • Door is closed.	• Turn on the scanner. • Check the error message on ACQ software.
The scanner returns to home position unexpectedly.	The scanner was exposed to a very strong ambient light or to a camera flash directed to the insertion panel.	Reduce the ambient light to the level specified in the **CS 7200 Safety, Regulatory, and Technical Specifications User Guide**.
The scanner performs a spontaneous reboot.	Electrical noise from the peripheral devices.	• Make sure the scanner is located away from the suspected noise generators. • Connect the power supply to a separate mains wall outlet.
The plate loading process is not smooth and requires some force to apply.	The hygienic sheath is partially sealed.	Make sure the hygienic sheath is fully open before loading the plate.
The scanner returns to home position before the loading is completed.	The imaging plate was retrieved before it was completely loaded into the scanner.	• Wait for the scanner to return to its home position. • Perform a complete loading process.
Vertical lines display on the scanned image.	Scanner was not stable or was hit during the scan.	• Make sure the scanner is positioned on a stable surface. • Make sure you do not touch the scanner during the scan.
During the power up, the scanner remains off, and the indication LED is off. The CR icon disappears from the Dental Imaging software toolbar.	There is no power supply to the system: • Power supply is not connected to the mains wall outlet. • Power supply is not connected to the scanner. • Problems with the facility power supply. • Power supply is damaged. • Scanner malfunction.	Make sure the power supply is properly connected.
LED indicator is steady yellow.	• Scanner is not activated. • Memory is full. • Front panel is unmounted.	• Activate the scanner. • Remove image from scanner memory. • Re-mount front panel.
LED indicator blinks red. No error message is displayed.	The cause is unknown.	• Restart the scanner. • If problem persists, call Service.
LED indicator blinks red during the scanner power on, and the noise is sounded.	Scanner hardware malfunction.	• Restart the scanner. • If the problem persists, repeat three times. • If problem persists, call Service.

Symptom	Cause	Corrective Action
LED indicator blinks red. **Error code #9011, #9012, #9014, #9018, #9021, 9022, 9023, #9039, #9080, #9110**	Scanner hardware malfunction.	• Restart the scanner. • If the problem persists, call Service.
LED indicator is yellow. **Error code #9015**	Insertion panel is detached from the scanner.	Properly attach the panel to the scanner. **Warning**: **Do not change the position of the plate selector knob.**
LED indicator blinks red. **Error code #9016**	The plate was not scanned and remained inside the scanner.	Press the power button to eject the plate. If the plate is not ejected, do the following: • Remove the insertion panel. • While holding the visible part of the plate, lift the scanner protection door. • Remove the plate from the scanner. • If the plate fell inside the scanner, remove the service tray and remove the plate. • Attach the insertion panel. • Click **OK** to close the error message. • Perform a scan.
LED indicator blinks red. **Error code #9024**	• Scanner hardware malfunction. • Power supply malfunction.	• Restart the scanner. • Replace the scanner power supply. • If the problem persists, call Service.
LED indicator blinks red. **Error code #9025**	Scanner hardware malfunction.	• Turn off the scanner. • Wait for five minutes and restart the scanner. • If the problem persists, call Service.
LED indicator blinks red. **Error code #9030**	Software files version does not match the scanner files version.	Update scanner files.
LED indicator blinks red. **Error code #9031**	Scanner hardware malfunction.	• Press the power button to shut down the scanner. • Restart the scanner. The plate is ejected. • Rescan the plate. • If the problem persists, call Service.
LED indicator blinks red. **Error code #9036**	Scanner hardware malfunction.	• Press the power button to eject the plate. • Rescan the plate. • If the problem persists, call Service.
LED indicator blinks red. **Error code #9043**	• Plate was not loaded properly. • Scanner hardware malfunction.	• Press the power button to eject the plate. • Rescan the plate. • If the problem persists, restart the scanner. • If the problem persists, call Service.
LED indicator blinks red. **Error code #9044, #9047**	• Plate was not ejected and erased properly. • Scanner hardware malfunction.	• Press the power button to eject the plate. • Erase the plate manually. • If the problem persists, restart the scanner. • If the problem persists, call Service.
LED indicator blinks red. **Error code #9045, #9048**	• Plate was not scanned properly. • Scanner hardware malfunction.	• Press the power button to eject the plate. • Reload the plate.
LED indicator blinks red. **Error code #9061-69**	Scanner hardware malfunction.	• Press the power button to shut down the scanner. • Restart the scanner.
LED indicator blinks red. **Error code #9046, #9049**	• Plate was not scanned properly. • Scanner hardware malfunction.	• Press the power button to eject the plate. • Rescan the plate. • If the problem persists, restart the scanner. • If the problem persists, call Service.
LED indicator blinks red. **Error code #9060**	Scanner hardware malfunction.	• Call Service and continue with regular scanner operation. **Note**: This error will display on each power up, until it is fixed by Service.

Symptom	Cause	Corrective Action
LED indicator yellow. **Error code #9071**	Scanner memory full.	See "Clearing Scanner Memory" on page 90.
LED indicator red. **Error code #9081**	• Scanner hardware malfunction. • Plate was not erased properly.	• Click the power button to eject the plate. • Manually erase the plate. • If the problem persists, call Service.
LED indicator yellow. Error beeps are sounded when loading a plate. **Error code #9090**	Plate was loaded upside down or diagonally.	Retrieve the plate and load the plate properly.
LED indicator yellow. **Error code #9090**	• Plate was loaded upside down or diagonally. • Plate was not scanned.	• Press the power button to eject the plate. • Load the plate properly.
LED indicator red. **Error code #9120**	Scanner hardware malfunction.	• Press the power button to shut down the scanner. • Restart the scanner. • Rescan the plate. • If the problem persists, call Service.
Error code #9800	The scanner files are not up to date.	Update the scanner files.
Error code #9801	Scanner drivers files are not up to date.	Update the scanner drivers files.
LED indicator yellow. **Error code #9852**	• Scanner hardware malfunction. • Plate was not scanned or erased properly.	• Restart the scanner. • Reload the plate for scan. • If the problem persists, call Service.
Plate was not ejected.	Plate was not properly ejected.	• Remove the insertion panel. • Remove the service tray and remove the plate. • Attach the insertion panel.
LED indicator red. **Error code #9111**	Scanner's date and time are incorrect.	• Open Scanner Manager. • Select the scanner. • Click **Setup**. • Set the date and time. • Restart the scanner. • If the problem persists, call Service.

Scanner Manager

The **Scanner Manager** is mainly for use by technicians or under direct supervision of a dental service technician.

> **Note:** For information on the **Scanner Manager** for technicians, see the CS 7200 Service Guide.

Accessing the Scanner Manager

To access the **Scanner Manager**, follow these steps:

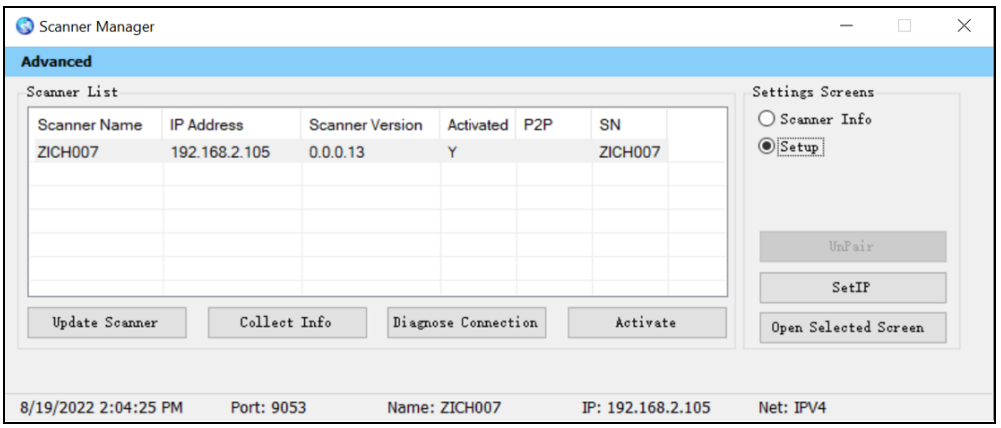
1 On the desktop, double-click the **Scanner Manager** icon 

.

OR

Click **Start > Programs > IP3 Image Acquisition > Scanner Manager**. The **Scanner Manager** is displayed.

> **Tip:** To create a desktop shortcut for the Scanner Manager, click **Start > Programs > IP3 Image Acquisition > Scanner Manager** and drag and drop the **Scanner Manager** to the desktop.



> **Note:** The connected scanner or scanners are shown in the Scanner List.

2 Select a scanner from the Scanner List. If the message **Scanner not found** is displayed, check scanner connectivity. See "Quick Troubleshooting" on page 107.

The following functions can be selected from the **Scanner Manager** window:

- "Scanner Manual IP Setup" on page 45–Enables you to set up the scanner IP.
- "Unpairing the Scanner" on page 112–Enables you to unpair the scanner from any workstation.
- "Scanner Info" on page 113–Presents general system information.
- "Scanner Setup" on page 114–Enables setting of scanner name, user language, time and date.
- "Updating the Scanner Using Scanner Manager" on page 115–Upgrades the scanner's embedded software version to the latest version.
- "Collect Info" on page 116–Enables you to collect the necessary log files from the scanner and from the workstation for inspection.
- "Diagnose Connection" on page 117–Enables you to diagnose the connection between the scanner and the computer.
- "Activate Scanner" on page 117–Enables you to activate the scanner license.

Setting the IP

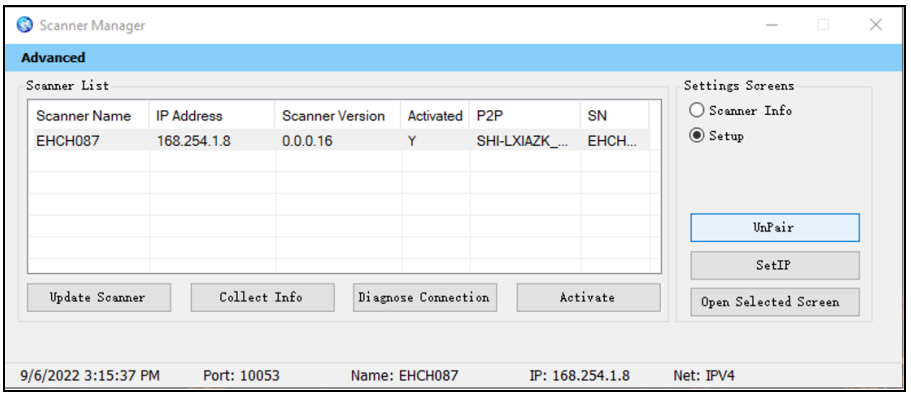
You set up the scanner's IP address from the Scanner Manager. See "Scanner Manual IP Setup" on page 45.

Unpairing the Scanner

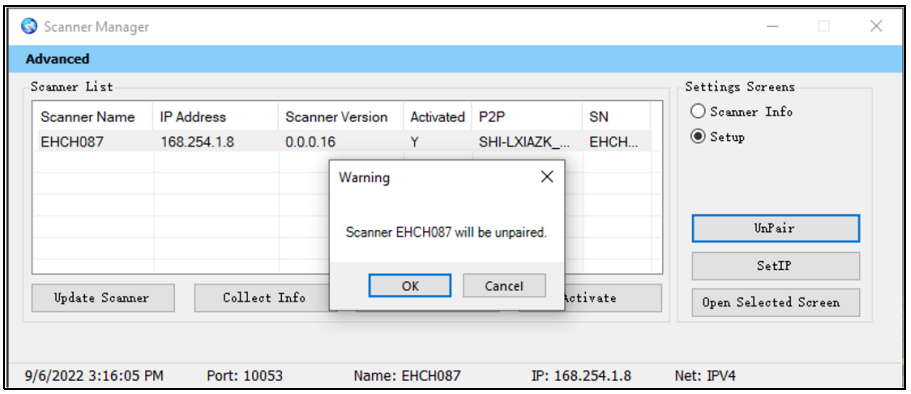
If necessary, you can eliminate (unpair) the peer-to-peer relationship between the scanner and any workstation.

To unpair the scanner, follow these steps:

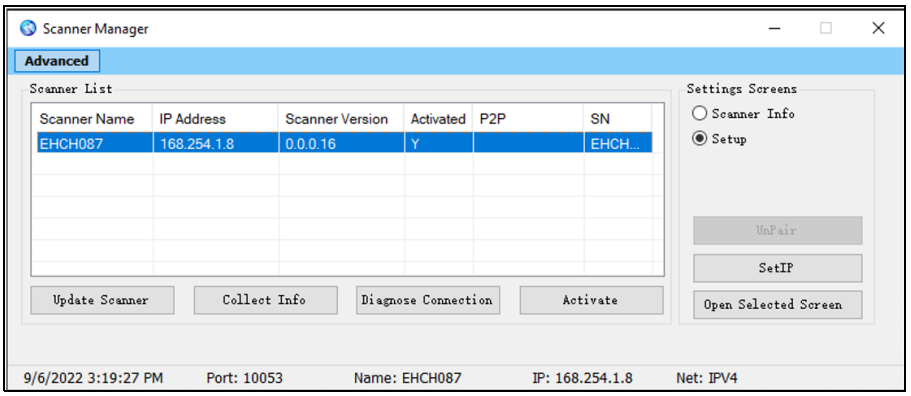
1 Select the name of the scanner from the Scanner List, and click **UnPair**.



A warning message is displayed.



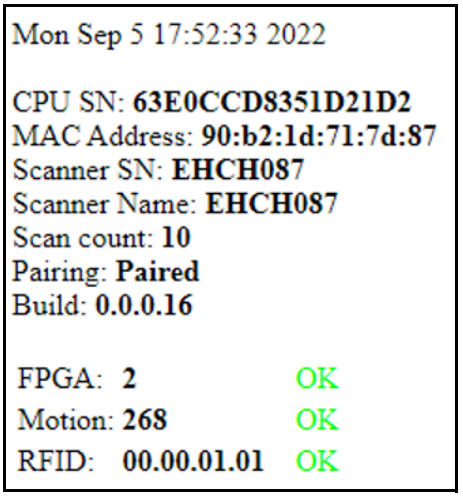
2 Click **OK** to unpair the scanner.



Scanner Info

You must provide this information to your Carestream Dental distributor upon request.

Figure 16 Scanner Info Screen



To open the **Scanner Info** screen, follow these steps:

1 In the **Settings Screens** area, select **Scanner Info**.

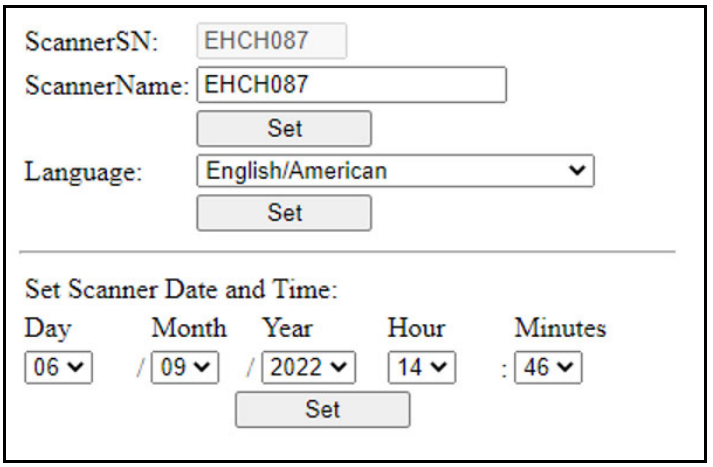
2 Click **Open Selected Screen.** The **Scanner Info** screen is displayed.

Scanner Setup

To open the **Scanner Setup** screen, follow these steps:

1 In the **Settings Screens** area, select **Scanner Setup**.

2 Click **Open Selected Screen**. The **Scanner Setup** screen is displayed.



Note: The scanner serial number cannot be changed.

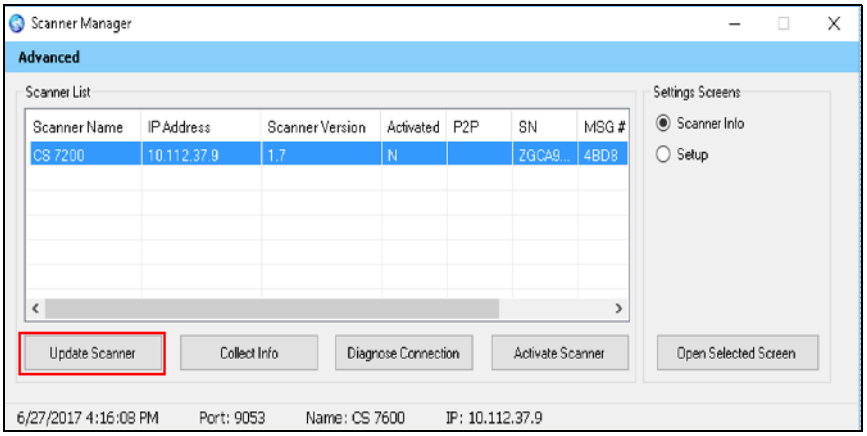
The **Scanner Setup** screen enables you to set the following:

- Scanner serial number, scanner name, and language for error messages
- Scanner date and time

Updating the Scanner Using Scanner Manager

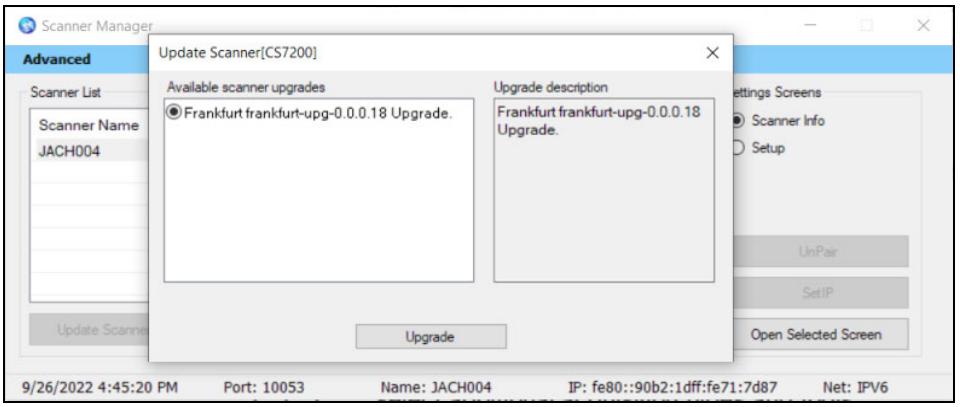
Important: Updating the scanner is to be performed under direct supervision of a dental service engineer.

The scanner version (embedded software) can be updated with the **Scanner Manager** tool by selecting the **Update Scanner** button.

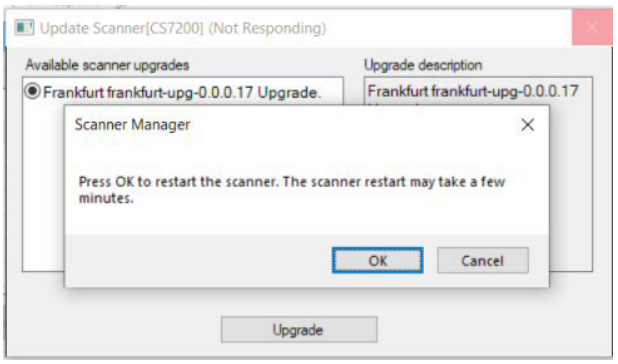


To upgrade the scanner, follow these steps:

1 Select the scanner and click **Update Scanner.** Wait while the scanner updates.



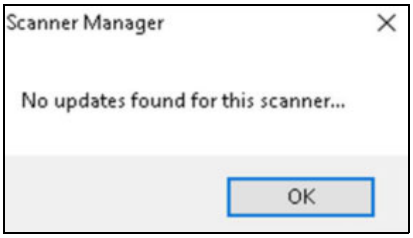
The file named **Frankfurt-upg-x.x.x.x.upgrade** is copied from the **UPGScanner** folder to the scanner. The process starts and takes approximately one minute. Then the **Restart** screen is displayed.



2 Click **OK** and restart the scanner. After the scanner is restarted, the scanner has been updated, and the scanner is ready for scanning.

OR

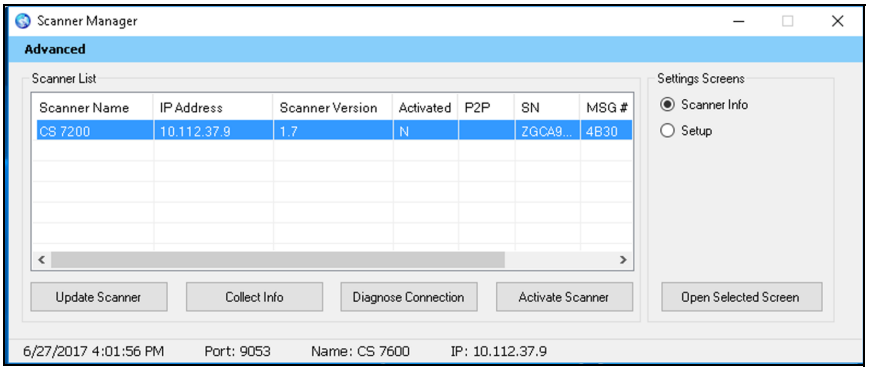
If the scanner is already up to date, the following message is displayed.



3 Click **OK**.

Collect Info

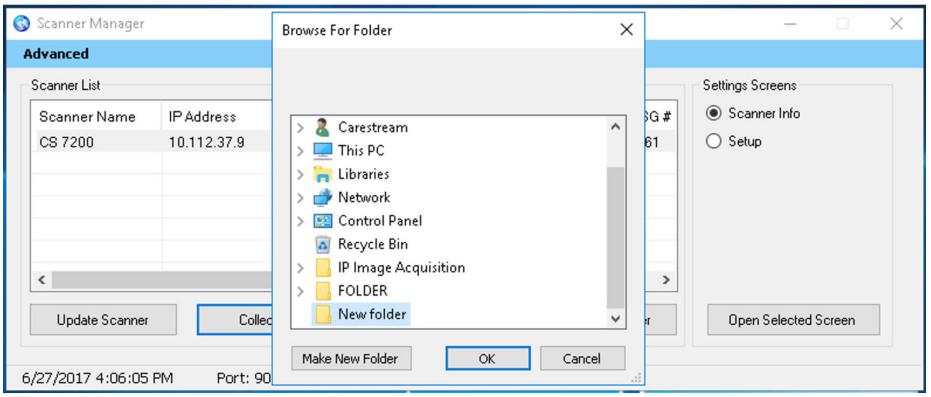
This tool collects the necessary log files from the scanner and from the workstation, and then the dental service engineer or user is able to save the zip file on the local PC and send it for inspection.



To use the **Collect Info** tool, follow these steps:

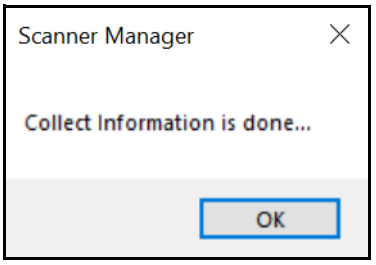
1 Select the scanner and click **Collect Info**.

2 Create a new folder with the scanner name (recommended). A browse window is displayed.



3 Click on the folder and click **OK.** The process begins and takes a few minutes. Upon completion, you are able to send the file for inspection. The zip file that was created by this tool is called **"CollectInfo.tar.gz"**

4 Select a destination folder for the information to be stored, and click **OK**. Wait a few minutes as the information is being collected.



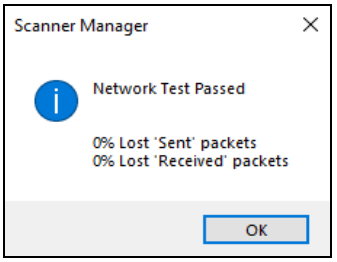
5 When the **Collect Information is done** message is displayed, click **OK**. The information is stored in the selected destination folder.

Diagnose Connection

Important: Diagnose connection is to be performed under direct supervision of a dental service engineer.

To diagnose the connection between the scanner and computer, follow these steps:

1 Click **Diagnose Connection**. After a few minutes, the following message is displayed:



Note: If more than 3% of packets are lost, a **Network Test Failed** message is displayed. Click **OK** and contact your system administrator.

2 Click **OK**.

Activate Scanner

To activate the scanner, follow these steps:

1 Click **Activate**. CS Licensing is launched.

2 Follow the activation process.

12 Contact Information

Manufacturer's Address

Carestream Dental LLC
3625 Cumberland Boulevard, Suite 700,
Atlanta, GA USA 30339

Factory

Rayco (Shanghai) Medical Products Company Limited
Building 7, No. 1510 Chuanqiao Road,
China (Shanghai) Pilot Free Trade Zone
201206 Shanghai China
PEOPLE'S REPUBLIC OF CHINA

Authorized Representatives

Authorized Representative in the European Community

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4, Rue F. Pelloutier
Croissy-Beaubourg
77435 Marne-la-Vallée, Cedex 2
France

UK Responsible Person

Carestream Dental Ltd.
Jessica Igies-Mikaelson
Wiltron House, Rutherford Close
Stevenage
Hertfordshire, SG1 2EF
United Kingdom

Authorized Representative in Brazil

Carestream Dental Brasil Eireli
Rua Romualdo Davoli, 65
1° Andar, Sala 01 - São José dos Campos
São Paulo - Brazil
CEP (Zip code): 12238-577

List of Importers for European Union According to the MDR 2017/745

Carestream Dental France SAS
4 Rue F. Pelloutier, Croissy-Beaubourg
77435 Marne-la-Vallée Cedex 2, France

Carestream Dental Germany GmbH
Hedelfinger Str. 60
70327 Stuttgart, Germany

Carestream Dental Spain, S.L.U.
Paseo de la Castellana, 79
Madrid 28046, España

Carestream Dental Italy S.r.l.
Via Mario Idiojmi 3/3
Assago 20090 (MI), Italia

List of Importers for Switzerland

CURADEN AG
Riedstrasse 12
CH-8953 Dietikon
Switzerland

Dema dent AG
Furtbachstrasse 16
CH-8107 Buchs
Switzerland

Jordi Röntgentechnik AG
Dammstrasse 70
CH-4142 Münchenstein
Switzerland

E. Schweizer AG
Bernerstrasse Nord 182
CH-8064 Zürich
Switzerland

13 List of Consumables

List of Consumables

P/N	Description	Qty
5942503	Hygienic Sheaths #0	200 Pcs
5942529	Hygienic Sheaths #1	200 Pcs
5942578	Hygienic Sheaths #2	200 Pcs
5942511	Imaging Plate #0	4 Pcs
5942537	Imaging Plate #1	4 Pcs
5942645	Imaging Plate #2	4 Pcs
8607020	Carestream Screen Cleaner	

14 Reesgulatory Information

Compliance with FCC/ISED Rules

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada’s licence-exempt RSS(s). Operation is subject to the following two conditions:
1) This device may not cause interference.
2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:
1) L'appareil ne doit pas produire de brouillage;
2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d’en compromettre le fonctionnement.

Caution: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.